

# Element Materials Technology

(formerly PCTEST)

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## MEASUREMENT REPORT

### PART 27

**Applicant Name:**

Apple Inc.  
One Apple Park Way  
Cupertino, CA 95014  
United States

**Date of Testing:**

7/1/2024 - 12/26/2024

**Test Report Issue Date:**

1/26/2025

**Test Site/Location:**

Element Materials Technology, Morgan Hill, CA, USA

**Test Report Serial No.:**

1C2410210075-10-R1.BCG

**FCC ID:****BCGA3269****Applicant Name:****Apple Inc.****Application Type:**

Certification

**Model:**

A3269, A3271

**EUT Type:**

Tablet Device

**FCC Classification:**

PCS Licensed Transmitter (PCB)

**FCC Rule Part:**

27

**Test Procedure(s):**

ANSI C63.26-2015, TIA-603-E-2016, KDB 971168 D01 v03r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

This revised Test Report (S/N: 1C2410210075-10-R1.BCG) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose accordingly.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



RJ Ortanez  
Executive Vice President



FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT	
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Approved by: Technical Manager Page 1 of 427

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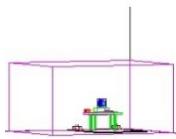
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## T A B L E   O F   C O N T E N T S

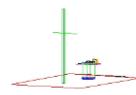
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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
LTE Band 30	5 MHz	QPSK	2307.5 - 2312.5	4.5621	0.222	23.47	4M56G7W
		16QAM	2307.5 - 2312.5	4.6216	0.177	22.49	4M62D7W
		64QAM	2307.5 - 2312.5	4.5913	0.142	21.52	4M59D7W
		256QAM	2307.5 - 2312.5	4.6094	0.073	18.61	4M61D7W
	10MHz	QPSK	2310	9.1239	0.219	23.40	9M12G7W
		16QAM	2310	9.1099	0.177	22.49	9M11D7W
		64QAM	2310	9.0867	0.138	21.39	9M09D7W
		256QAM	2310	9.0971	0.069	18.38	9M10D7W
LTE Band 7	5 MHz	QPSK	2502.5 - 2567.5	4.5791	0.337	25.28	4M58G7W
		16QAM	2502.5 - 2567.5	4.5532	0.267	24.26	4M55D7W
		64QAM	2502.5 - 2567.5	4.5773	0.214	23.30	4M58D7W
		256QAM	2502.5 - 2567.5	4.5732	0.109	20.39	4M57D7W
	10 MHz	QPSK	2505 - 2565	9.0793	0.339	25.30	9M08G7W
		16QAM	2505 - 2565	9.0689	0.259	24.13	9M07D7W
		64QAM	2505 - 2565	9.0999	0.209	23.20	9M10D7W
		256QAM	2505 - 2565	9.0614	0.103	20.13	9M06D7W
	15 MHz	QPSK	2507.5 - 2562.5	13.6147	0.339	25.30	13M6G7W
		16QAM	2507.5 - 2562.5	13.6200	0.271	24.33	13M6D7W
		64QAM	2507.5 - 2562.5	13.5900	0.215	23.33	13M6D7W
		256QAM	2507.5 - 2562.5	13.6225	0.108	20.32	13M6D7W
	20 MHz	QPSK	2510 - 2560	18.1006	0.338	25.29	18M1G7W
		16QAM	2510 - 2560	18.1308	0.268	24.28	18M1D7W
		64QAM	2510 - 2560	18.0840	0.214	23.30	18M1D7W
		256QAM	2510 - 2560	18.0839	0.109	20.38	18M1D7W
LTE Band 41 (PC2)	5 MHz	QPSK	2498.5 - 2687.5	4.5581	1.119	30.49	4M56G7W
		16QAM	2498.5 - 2687.5	4.5353	0.889	29.49	4M54D7W
		64QAM	2498.5 - 2687.5	4.5272	0.710	28.51	4M53D7W
		256QAM	2498.5 - 2687.5	4.5213	0.363	25.60	4M52D7W
	10 MHz	QPSK	2501 - 2685	9.0512	1.107	30.44	9M05G7W
		16QAM	2501 - 2685	9.0602	0.893	29.51	9M06D7W
		64QAM	2501 - 2685	9.0332	0.705	28.48	9M03D7W
		256QAM	2501 - 2685	9.0263	0.457	26.60	9M03D7W
	15 MHz	QPSK	2503.5 - 2682.5	13.5642	1.119	30.49	13M6G7W
		16QAM	2503.5 - 2682.5	13.5522	0.885	29.47	13M6D7W
		64QAM	2503.5 - 2682.5	13.5438	0.700	28.45	13M5D7W
		256QAM	2503.5 - 2682.5	13.5481	0.348	25.41	13M5D7W
	20 MHz	QPSK	2506 - 2680	18.0610	1.122	30.50	18M1G7W
		16QAM	2506 - 2680	18.0895	0.873	29.41	18M1D7W
		64QAM	2506 - 2680	18.0213	0.695	28.42	18M0D7W
		256QAM	2506 - 2680	18.0074	0.364	25.61	18M0D7W
LTE Band 41(PC3)	5 MHz	QPSK	2498.5 - 2687.5	4.5581	0.617	27.90	4M56G7W
		16QAM	2498.5 - 2687.5	4.5353	0.494	26.94	4M54D7W
		64QAM	2498.5 - 2687.5	4.5272	0.401	26.03	4M53D7W
		256QAM	2498.5 - 2687.5	4.5213	0.206	23.13	4M52D7W
	10 MHz	QPSK	2501 - 2685	9.0512	0.631	28.00	9M05G7W
		16QAM	2501 - 2685	9.0602	0.501	27.00	9M06D7W
		64QAM	2501 - 2685	9.0332	0.399	26.01	9M03D7W
		256QAM	2501 - 2685	9.0263	0.204	23.10	9M03D7W
	15 MHz	QPSK	2503.5 - 2682.5	13.5642	0.631	28.00	13M6G7W
		16QAM	2503.5 - 2682.5	13.5522	0.499	26.98	13M6D7W
		64QAM	2503.5 - 2682.5	13.5438	0.390	25.91	13M5D7W
		256QAM	2503.5 - 2682.5	13.5481	0.205	23.12	13M5D7W
	20 MHz	QPSK	2506 - 2680	18.0610	0.631	28.00	18M1G7W
		16QAM	2506 - 2680	18.0895	0.472	26.74	18M1D7W
		64QAM	2506 - 2680	18.0213	0.398	26.00	18M0D7W
		256QAM	2506 - 2680	18.0074	0.204	23.10	18M0D7W
ULCA LTE Band 7	20 + 20 MHz	QPSK	2520 - 2550	37.5715	0.330	25.18	37M6G7W
		16QAM	2520 - 2550	37.5616	0.196	22.92	37M6D7W
		64QAM	2520 - 2550	37.5670	0.151	21.79	37M6D7W
		256QAM	2520 - 2550	37.5814	0.097	19.85	37M6D7W
ULCA LTE Band 41(PC2)	20 + 20 MHz	QPSK	2516 - 2670	37.5237	0.853	29.31	37M5G7W
		16QAM	2516 - 2670	37.5332	0.497	26.96	37M5D7W
		64QAM	2516 - 2670	37.5507	0.454	26.57	37M6D7W
		256QAM	2516 - 2670	37.5353	0.277	24.43	37M5D7W
ULCA LTE Band 41(PC3)	20 + 20 MHz	QPSK	2516 - 2670	37.5237	0.612	27.87	37M5G7W
		16QAM	2516 - 2670	37.5332	0.301	24.78	37M5D7W
		64QAM	2516 - 2670	37.5507	0.293	24.67	37M6D7W
		256QAM	2516 - 2670	37.5353	0.284	24.54	37M5D7W

### EUT Overview

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n30	5 MHz	TT/2 BPSK	2307.5 - 2312.5	4.4775	0.209	23.21	4M48G7W
		QPSK	2307.5 - 2312.5	4.4733	0.201	23.04	4M47G7W
		16QAM	2307.5 - 2312.5	4.4956	0.172	22.35	4M50D7W
		64QAM	2307.5 - 2312.5	4.4929	0.138	21.41	4M49D7W
		256QAM	2307.5 - 2312.5	4.4778	0.073	18.61	4M48D7W
	10MHz	TT/2 BPSK	2310	8.9830	0.201	23.03	8M98G7W
		QPSK	2310	9.2543	0.201	23.04	9M25G7W
		16QAM	2310	9.3401	0.175	22.42	9M34D7W
		64QAM	2310	9.3314	0.143	21.55	9M33D7W
		256QAM	2310	9.2899	0.071	18.52	9M29D7W
NR Band n7	5 MHz	TT/2 BPSK	2502.5 - 2567.5	4.4837	0.339	25.30	4M48G7W
		QPSK	2502.5 - 2567.5	4.4861	0.336	25.26	4M49G7W
		16QAM	2502.5 - 2567.5	4.4546	0.267	24.26	4M45D7W
		64QAM	2502.5 - 2567.5	4.4591	0.214	23.31	4M46D7W
		256QAM	2502.5 - 2567.5	4.4941	0.109	20.36	4M49D7W
	10MHz	TT/2 BPSK	2505 - 2565	8.9697	0.339	25.30	8M97G7W
		QPSK	2505 - 2565	9.3092	0.334	25.24	9M31G7W
		16QAM	2505 - 2565	9.3096	0.266	24.25	9M31D7W
		64QAM	2505 - 2565	9.2939	0.215	23.32	9M29D7W
		256QAM	2505 - 2565	9.2501	0.110	20.41	9M25D7W
	15 MHz	TT/2 BPSK	2507.5 - 2562.5	13.4588	0.339	25.30	13M5G7W
		QPSK	2507.5 - 2562.5	14.0861	0.337	25.27	14M1G7W
		16QAM	2507.5 - 2562.5	14.1327	0.269	24.29	14M1D7W
		64QAM	2507.5 - 2562.5	14.1758	0.212	23.27	14M2D7W
		256QAM	2507.5 - 2562.5	14.1270	0.109	20.39	14M1D7W
	20MHz	TT/2 BPSK	2510 - 2560	17.8632	0.338	25.29	17M9G7W
		QPSK	2510 - 2560	19.0759	0.339	25.30	19M1G7W
		16QAM	2510 - 2560	18.9900	0.266	24.25	19M0D7W
		64QAM	2510 - 2560	18.9958	0.213	23.29	19M0D7W
		256QAM	2510 - 2560	18.9300	0.109	20.39	18M9D7W
	25MHz	TT/2 BPSK	2512.5 - 2557.5	22.9027	0.339	25.30	22M9G7W
		QPSK	2512.5 - 2557.5	23.8098	0.339	25.30	23M8G7W
		16QAM	2512.5 - 2557.5	23.7682	0.267	24.27	23M8D7W
		64QAM	2512.5 - 2557.5	23.8380	0.212	23.27	23M8D7W
		256QAM	2512.5 - 2557.5	23.8574	0.110	20.41	23M9D7W
	30MHz	TT/2 BPSK	2515 - 2555	28.6965	0.330	25.19	28M7G7W
		QPSK	2515 - 2555	28.6992	0.339	25.30	28M7G7W
		16QAM	2515 - 2555	28.6350	0.270	24.31	28M6D7W
		64QAM	2515 - 2555	28.6702	0.212	23.27	28M7D7W
		256QAM	2515 - 2555	28.6704	0.109	20.36	28M7D7W
	35MHz	TT/2 BPSK	2517.5 - 2552.5	32.3024	0.206	23.14	32M3G7W
		QPSK	2517.5 - 2552.5	33.8288	0.320	25.05	33M8G7W
		16QAM	2517.5 - 2552.5	33.5897	0.339	25.30	33M6D7W
		64QAM	2517.5 - 2552.5	33.6652	0.333	25.23	33M7D7W
		256QAM	2517.5 - 2552.5	33.6830	0.262	24.19	33M7D7W
	40MHz	TT/2 BPSK	2520 - 2550	38.6283	0.339	25.30	38M6G7W
		QPSK	2520 - 2550	38.6814	0.333	25.23	38M7G7W
		16QAM	2520 - 2550	38.6480	0.269	24.29	38M6D7W
		64QAM	2520 - 2550	38.6099	0.214	23.30	38M6D7W
		256QAM	2520 - 2550	38.6788	0.109	20.38	38M7D7W

### EUT Overview

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n41 (PC2)	10 MHz	TT/2 BPSK	2501 - 2685	8.5919	1.114	30.47	8M59G7W
		QPSK	2501 - 2685	8.5997	1.122	30.50	8M60G7W
		16QAM	2501 - 2685	8.5786	0.859	29.34	8M58D7W
		64QAM	2501 - 2685	8.5600	0.703	28.47	8M56D7W
		256QAM	2501 - 2685	8.5784	0.361	25.58	8M58D7W
	15 MHz	TT/2 BPSK	2503.5 - 2682.5	12.8388	1.122	30.50	12M8G7W
		QPSK	2503.5 - 2682.5	13.6086	1.122	30.50	13M6G7W
		16QAM	2503.5 - 2682.5	13.5718	0.869	29.39	13M6D7W
		64QAM	2503.5 - 2682.5	13.5812	0.693	28.41	13M6D7W
		256QAM	2503.5 - 2682.5	13.5442	0.364	25.61	13M5D7W
	20 MHz	TT/2 BPSK	2506 - 2680	17.8775	1.094	30.39	17M9G7W
		QPSK	2506 - 2680	18.2946	1.122	30.50	18M3G7W
		16QAM	2506 - 2680	18.3226	0.887	29.48	18M3D7W
		64QAM	2506 - 2680	18.2911	0.695	28.42	18M3D7W
		256QAM	2506 - 2680	18.2821	0.355	25.50	18M3D7W
	30MHz	TT/2 BPSK	2511 - 2675	26.7893	1.102	30.42	26M8G7W
		QPSK	2511 - 2675	27.8098	1.122	30.50	27M8G7W
		16QAM	2511 - 2675	28.0002	0.877	29.43	28M0D7W
		64QAM	2511 - 2675	27.8588	0.695	28.42	27M9D7W
		256QAM	2511 - 2675	27.9164	0.361	25.57	27M9D7W
	40 MHz	TT/2 BPSK	2516 - 2670	35.8277	1.114	30.47	35M8G7W
		QPSK	2516 - 2670	37.9819	1.112	30.46	38M0G7W
		16QAM	2516 - 2670	37.9225	0.863	29.36	37M9D7W
		64QAM	2516 - 2670	38.0475	0.700	28.45	38M0D7W
		256QAM	2516 - 2670	37.9268	0.349	25.43	37M9D7W
	50 MHz	TT/2 BPSK	2521 - 2665	45.9348	1.109	30.45	45M9G7W
		QPSK	2521 - 2665	47.5416	1.114	30.47	47M5G7W
		16QAM	2521 - 2665	47.6118	0.897	29.53	47M6D7W
		64QAM	2521 - 2665	47.5872	0.711	28.52	47M6D7W
		256QAM	2521 - 2665	47.6658	0.356	25.52	47M7D7W
	60 MHz	TT/2 BPSK	2526 - 2660	58.0649	1.122	30.50	58M1G7W
		QPSK	2526 - 2660	58.0393	1.072	30.30	58M0G7W
		16QAM	2526 - 2660	57.9975	0.875	29.42	58M0D7W
		64QAM	2526 - 2660	58.0252	0.705	28.48	58M0D7W
		256QAM	2526 - 2660	58.0017	0.358	25.54	58M0D7W
	70 MHz	TT/2 BPSK	2531 - 2655	64.4306	1.114	30.47	64M4G7W
		QPSK	2531 - 2655	67.6350	1.084	30.35	67M6G7W
		16QAM	2531 - 2655	67.6891	0.865	29.37	67M7D7W
		64QAM	2531 - 2655	67.6859	0.689	28.38	67M7D7W
		256QAM	2531 - 2655	67.6500	0.361	25.58	67M6D7W
	80 MHz	TT/2 BPSK	2536 - 2650	77.3032	1.114	30.47	77M3G7W
		QPSK	2536 - 2650	77.8062	1.122	30.50	77M8G7W
		16QAM	2536 - 2650	77.6527	0.893	29.51	77M7D7W
		64QAM	2536 - 2650	77.8275	0.710	28.51	77M8D7W
		256QAM	2536 - 2650	77.9021	0.364	25.61	77M9D7W
	90 MHz	TT/2 BPSK	2541 - 2645	86.8918	1.122	30.50	86M9G7W
		QPSK	2541 - 2645	87.7484	1.117	30.48	87M7G7W
		16QAM	2541 - 2645	87.7915	0.871	29.40	87M8D7W
		64QAM	2541 - 2645	87.7222	0.716	28.55	87M7D7W
		256QAM	2541 - 2645	87.9160	0.353	25.48	87M9D7W
	100 MHz	TT/2 BPSK	2546 - 2640	96.6554	1.122	30.50	96M7G7W
		QPSK	2546 - 2640	97.5715	1.107	30.44	97M6G7W
		16QAM	2546 - 2640	97.8136	0.895	29.52	97M8D7W
		64QAM	2546 - 2640	97.8926	0.697	28.43	97M9D7W
		256QAM	2546 - 2640	97.7960	0.345	25.38	97M8D7W

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Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device			

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n41 (PC3)	10 MHz	TT/2 BPSK	2501 - 2685	8.5919	0.613	27.87	8M59G7W
		QPSK	2501 - 2685	8.5997	0.631	28.00	8M60G7W
		16QAM	2501 - 2685	8.5786	0.488	26.89	8M58D7W
		64QAM	2501 - 2685	8.5600	0.362	25.59	8M56D7W
		256QAM	2501 - 2685	8.5784	0.219	23.41	8M58D7W
	15 MHz	TT/2 BPSK	2503.5 - 2682.5	12.8388	0.621	27.93	12M8G7W
		QPSK	2503.5 - 2682.5	13.6086	0.631	28.00	13M6G7W
		16QAM	2503.5 - 2682.5	13.5718	0.518	27.15	13M6D7W
		64QAM	2503.5 - 2682.5	13.5812	0.350	25.44	13M6D7W
		256QAM	2503.5 - 2682.5	13.5442	0.215	23.32	13M5D7W
	20 MHz	TT/2 BPSK	2506 - 2680	17.8775	0.619	27.92	17M9G7W
		QPSK	2506 - 2680	18.2946	0.631	28.00	18M3G7W
		16QAM	2506 - 2680	18.3226	0.504	27.03	18M3D7W
		64QAM	2506 - 2680	18.2911	0.341	25.33	18M3D7W
		256QAM	2506 - 2680	18.2821	0.221	23.44	18M3D7W
	30MHz	TT/2 BPSK	2511 - 2675	26.7893	0.631	28.00	26M8G7W
		QPSK	2511 - 2675	27.8098	0.631	28.00	27M8G7W
		16QAM	2511 - 2675	28.0002	0.499	26.98	28M0D7W
		64QAM	2511 - 2675	27.8588	0.354	25.49	27M9D7W
		256QAM	2511 - 2675	27.9164	0.207	23.16	27M9D7W
	40 MHz	TT/2 BPSK	2516 - 2670	35.8277	0.607	27.83	35M8G7W
		QPSK	2516 - 2670	37.9819	0.631	28.00	38M0G7W
		16QAM	2516 - 2670	37.9225	0.483	26.84	37M9D7W
		64QAM	2516 - 2670	38.0475	0.343	25.35	38M0D7W
		256QAM	2516 - 2670	37.9268	0.216	23.34	37M9D7W
	50 MHz	TT/2 BPSK	2521 - 2665	45.9348	0.616	27.89	45M9G7W
		QPSK	2521 - 2665	47.5416	0.631	28.00	47M5G7W
		16QAM	2521 - 2665	47.6118	0.482	26.83	47M6D7W
		64QAM	2521 - 2665	47.5872	0.361	25.58	47M6D7W
		256QAM	2521 - 2665	47.6658	0.223	23.48	47M7D7W
	60 MHz	TT/2 BPSK	2526 - 2660	58.0649	0.631	28.00	58M1G7W
		QPSK	2526 - 2660	58.0393	0.623	27.94	58M0G7W
		16QAM	2526 - 2660	57.9975	0.511	27.09	58M0D7W
		64QAM	2526 - 2660	58.0252	0.365	25.63	58M0D7W
		256QAM	2526 - 2660	58.0017	0.220	23.42	58M0D7W
	70 MHz	TT/2 BPSK	2531 - 2655	64.4306	0.627	27.97	64M4G7W
		QPSK	2531 - 2655	67.6350	0.631	28.00	67M6G7W
		16QAM	2531 - 2655	67.6891	0.499	26.98	67M7D7W
		64QAM	2531 - 2655	67.6859	0.355	25.50	67M7D7W
		256QAM	2531 - 2655	67.6500	0.209	23.20	67M6D7W
	80 MHz	TT/2 BPSK	2536 - 2650	77.3032	0.625	27.96	77M3G7W
		QPSK	2536 - 2650	77.8062	0.631	28.00	77M8G7W
		16QAM	2536 - 2650	77.6527	0.510	27.08	77M7D7W
		64QAM	2536 - 2650	77.8275	0.357	25.53	77M8D7W
		256QAM	2536 - 2650	77.9021	0.221	23.45	77M9D7W
	90 MHz	TT/2 BPSK	2541 - 2645	86.8918	0.621	27.93	86M9G7W
		QPSK	2541 - 2645	87.7484	0.627	27.98	87M7G7W
		16QAM	2541 - 2645	87.7915	0.528	27.23	87M8D7W
		64QAM	2541 - 2645	87.7222	0.372	25.70	87M7D7W
		256QAM	2541 - 2645	87.9160	0.217	23.36	87M9D7W
	100 MHz	TT/2 BPSK	2546 - 2640	96.6554	0.613	27.87	96M7G7W
		QPSK	2546 - 2640	97.5715	0.631	28.00	97M6G7W
		16QAM	2546 - 2640	97.8136	0.483	26.84	97M8D7W
		64QAM	2546 - 2640	97.8926	0.346	25.39	97M9D7W
		256QAM	2546 - 2640	97.7960	0.217	23.37	97M8D7W

### EUT Overview

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device			

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## 1.0 INTRODUCTION

### 1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

### 1.2 Element Materials Technology Test Location

These measurement tests were conducted at the Element Materials Technology facility located at 18855 Adams Court, Morgan Hill, CA 95037. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

### 1.3 Test Facility / Accreditations

Measurements were performed at Element Materials Technology

- Element Materials Technology is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Materials Technology facility is a registered (22831) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Agreements (MRAs).

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID:BCGA3269**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

**Test Device Serial No.:** RTF5C4W1KX, XD4R967RNY, TJ4463YD19, DLXH57000060000RJY, DLXH570002H0000RJY

### 2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, 802.11a/ax WIFI 6E, 802.15.4, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), NB UNII (1x, HDR4, HDR8), WPT

This device supports BT Beamforming

Measurements for LTE Band 41, FR1 Band n41, and LTE ULCA B41 were performed with NS04 for all antennas. Measurements for LTE Band 30 were performed with NS21 for all antennas.

This device supports simultaneous transmission operations, which allows for multiple transmitters to transmit simultaneously on the same antenna. The table below shows all configurations possible.

Antenna	Simultaneous Tx Config	Bluetooth 2.4GHz	Thread	WLAN	NB UNII	WIFI 5GHz	WIFI 6GHz	LTE / FR1 NR		
		BDR, EDR, HDR4/8, LE1/2M	802.15.4	802.11 b/g/n/ax	BDR, HDR4/8	802.11 a/n/ac/ax	802.11 a/ax	LB	MB/HB	Ultra High Band
Ant 3b	Config 1	✗	✗	✗	✓	✗	✗	✗	✓	✗
Ant 3b	Config 2	✗	✗	✗	✗	✓	✗	✗	✓	✗
Ant 3b	Config 3	✗	✗	✗	✗	✗	✓	✗	✓	✗
Ant 3a	Config 4	✓	✗	✗	✗	✗	✗	✗	✗	✓
Ant 3a	Config 5	✗	✓	✗	✗	✗	✗	✗	✗	✓
Ant 3a	Config 6	✗	✗	✓	✗	✗	✗	✗	✗	✓
Ant 1a	Config 7	✓	✗	✗	✗	✗	✗	✗	✗	✓
Ant 1a	Config 8	✗	✓	✗	✗	✗	✗	✗	✗	✓
Ant 1a	Config 9	✗	✗	✓	✗	✗	✗	✗	✗	✓
Ant 1b	Config 10	✗	✗	✗	✓	✗	✗	✗	✓	✗
Ant 1b	Config 11	✗	✗	✗	✗	✓	✗	✗	✓	✗
Ant 1b	Config 12	✗	✗	✗	✗	✗	✓	✗	✓	✗

Table 2-1. Simultaneous Transmission Configurations

✓ = Support; ✗ = Not Support

**Note:**

1. All the above simultaneous transmission configurations have been tested and the worst case configuration was found to be Config 2.
2. Specific 2.4GHz Wi-Fi antenna that can only transmit simultaneously with 2.4GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4GHz) in connected mode and disconnected mode, and Wi-Fi (2.4GHz) - Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. Bluetooth can simultaneously transmit with IEEE 802.11a/n/ac/ax 5/6 GHz on separate antenna.

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## 2.3 Antenna Description

The following antenna gains provided by manufacturer were used for testing.

Band	Antenna Gain [dBi]			
	Antenna 4	Antenna 1b	Antenna 3b	Antenna 2
LTE Band 30	-2.6	0.1	0.7	2.0
NR Band n30		-0.3	-1.5	2.3
LTE Band 7	-0.4	-1.3	-2.1	2.3
NR Band n7				
LTE Band 41	0.9			
NR Band n41				

Table 2-2. Highest Antenna Gain

## 2.4 Test Support Equipment

Test Support Equipment					
1	Apple MacBook Pro w/AC/DC Adapter	Model: A2141 Model: A2166	S/N: C02H604EQ05D S/N: C4H042705ZNP0WA6		
2	Apple USB-C Cable	Model: Spartan	S/N: GXK1336018XKTR024		
3	USB-C Cable w/ AC Adapter	Model: A246C Model: A2305	S/N: DWH80115BK826GV19 S/N: C4H95160004PF4F4V		
4	Apple Pencil	Model: A2538	S/N: KJ26TCFXJW		
5	DC Power Supply	Model: KPS3010D	S/N: N/A		

Table 2-3. Test Support Equipment

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## 2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.26 2015, TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration. The emissions below 1GHz and above 18GHz were tested with the highest transmitting power and the worst case channel.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

All possible simultaneous transmission configurations have been investigated and the worst case config has been reported.

Description	LTE B41	UNII
Antenna	Antenna 3b	Antenna 3b
Channel	39750	36
Operating Frequency (MHz)	2506	5180
Mode/Modulation	QPSK/1RB/20MHz	802.11n

Table 2-4. Worst Case Simultaneous Transmission Configuration

## 2.6 Software and Firmware

The test was conducted with firmware version 22D20 installed on the EUT.

## 2.7 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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## 3.0 DESCRIPTION OF TESTS

### 3.1 Evaluation Procedure

The measurement procedures described in the documents titled “American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services” (ANSI C63.26-2015 and TIA-603-E-2016) and “Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems” (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

**Deviation from Measurement Procedure.....**None

### 3.2 Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

For radiated spurious emissions measurements and calculations, conversion method is used per the formulas in KDB 971168 Section 5.8.4. Field Strength (EIRP) is calculated using the following formulas:

$$E_{[\text{dB}\mu\text{V}/\text{m}]} = \text{Measured amplitude level}_{[\text{dBm}]} + 107 + \text{Cable Loss}_{[\text{dB}]} + \text{Antenna Factor}_{[\text{dB}/\text{m}]} \\ \text{And}$$

$$\text{EIRP}_{[\text{dBm}]} = E_{[\text{dB}\mu\text{V}/\text{m}]} + 20\log D - 104.8; \text{ where } D \text{ is the measurement distance in meters.}$$

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014.

Per KDB 414788 D01 v01r01, radiated emission test sites other than open-field test sites (e.g., shielded anechoic chambers), may be employed for emission measurements below 30MHz if characterized so that the measurements correspond to those obtained at an open-field test site. To determine test site equivalency, a reference sample transmitting at 149kHz was measured on an open field test site (asphalt with no ground plane) and then measured in the 3m semi-anechoic chamber. A calibrated 60cm loop antenna was used while the reference device was rotated through the X, Y and Z axis in order to capture the worst case level. A maximum deviation of 2.77dB at 149kHz was measured when comparing the 3 meter semi-anechoic chamber to the open field site.

Radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI C63.26-2015 and TIA-603-E-2016.

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## 4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.23-2012. All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the  $U_{CISPR}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty ( $\pm$ dB)
Conducted Bench Top Measurements	2.07
Radiated Disturbance (<30MHz)	4.12
Radiated Disturbance (30MHz-1GHz)	4.85
Radiated Disturbance (1-18GHz)	5.08
Radiated Disturbance (>18GHz)	5.22

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## 5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
ATM	180-442A-KF	20dB Nominal Gain Horn Antenna	3/14/2024	Annual	3/14/2025	T058701-01
ESPEC	SU-241	Tabletop Temperature Chamber	10/24/2024	Annual	10/24/2025	92009574
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	4/9/2024	Annual	4/9/2025	00218555
Fairview Microwave/MCL	FMCA1975-36/BW-K10-2W44+	30MHz-40GHz RF Cable/Attenuator *	6/10/2024	Annual	6/10/2025	-
Fairview Microwave	M2CP1122-10	RF Directional Coupler *	6/10/2024	Annual	6/10/2025	1946
Keysight Technology	N9040B	UXA Signal Analyzer	5/28/2024	Annual	5/28/2025	MY57212015
Rohde & Schwarz	FSW67	Signal and Spectrum Analyzer (2Hz-67GHz)	7/5/2024	Annual	7/5/2025	101366
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz - 18GHz)	3/1/2024	Annual	3/1/2025	102143
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	5/29/2024	Annual	5/29/2025	101619
Rohde & Schwarz	ESW44	EMI Test Receiver	5/1/2024	Annual	5/1/2025	101867
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz - 8GHz)	7/3/2024	Annual	7/3/2025	102356
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	12/27/2023	Annual	12/27/2024	164715
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	10/21/2024	Annual	10/21/2025	187423
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz - 40GHz)	6/10/2024	Annual	6/10/2025	100057
Rohde & Schwarz	HFH2-Z2	Loop Antenna	6/21/2024	Annual	6/21/2025	100519
Rohde & Schwarz	ENV216	Two-Line V-Network	4/24/2024	Annual	4/24/2025	101364
Schwarzbeck	VULB 9162	Bilog Antenna (30MHz - 6GHz)	4/29/2024	Annual	4/29/2025	00304

**Table 5-1. Test Equipment**

**Notes:**

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. \* denotes passive equipment that have been internally verified/calibrated.

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## 6.0 SAMPLE CALCULATIONS

### Emission Designator

#### $\pi/2$ BPSK / QPSK Modulation

**Emission Designator = 8M62G7W**

BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination of Any

#### QAM Modulation

**Emission Designator = 8M45D7W**

BW = 8.45 MHz

D = Amplitude/Angle Modulated

7 = Quantized/Digital Info

W = Combination of Any

### Spurious Radiated Emission

#### **Example: Spurious emission at 3700.40 MHz**

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was  $-81.0$  dBm. The gain of the substituted antenna is  $8.1$  dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of  $-81.0$  dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is  $2.0$  dB at  $3700.40$  MHz. So  $6.1$  dB is added to the signal generator reading of  $-30.9$  dBm yielding  $-24.80$  dBm. The fundamental EIRP was  $25.50$  dBm so this harmonic was  $25.50$  dBm  $- (-24.80) = 50.3$  dBc.

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## 7.0 TEST RESULTS

### 7.1 Summary

Company Name: Apple Inc.  
 FCC ID: BCGA3269  
 FCC Classification: PCS Licensed Transmitter (PCB)  
 Mode(s): LTE/NR/ULCA

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Occupied Bandwidth	2.1049	N/A	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">N/A</span>	Section 7.2
	Conducted Band Edge / Spurious Emissions (LTE Band 30)	2.1051, 27.53(a)	Undesirable emissions must meet the limits detailed in 27.53(a)	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 7)	2.1051, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 41)			<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (NR Band n41)			<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Sections 7.3, 7.4
	Transmitter Conducted Output Power	2.1046	N/A	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">N/A</span>	See RF Exposure Report
	Additional Maximum Power Reduction (A-MPR)	2.1046	N/A	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">N/A</span>	Section 7.5
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 30)	27.50(a)(3)	< 0.25 Watts max. EIRP	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 7)	27.50(h)(2)	< 2 Watts max. EIRP	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 41)			<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n41)			<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.6
	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block over the temperature and voltage range as tested	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.8
RADIATED	Radiated Spurious Emissions (LTE Band 30)	2.1053, 27.53(a)	> 70 + 10log10(P[Watts])	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.7
	Radiated Spurious Emissions (LTE Band 7)	2.1053, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.7
	Radiated Spurious Emissions (LTE Band 41)			<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.7
	Radiated Spurious Emissions (NR Band n41)			<span style="background-color: #e0f2ff; border: 1px solid #0070C0; padding: 2px 5px; border-radius: 3px;">PASS</span>	Section 7.7

Table 7-1. Summary of Test Results

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 15 of 427	

**Notes:**

1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2. The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
3. All antenna ports conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
4. All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized was Element EMC Software Tool v1.1.
5. For radiated spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is Element "Chamber Automation," Version 3.1.0.

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 16 of 427

## 7.2 Occupied Bandwidth

§2.1049

### Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

### Test Procedure Used

KDB 971168 D01 v03r01 – Section 4.2

### Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW  $\geq$  3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

### Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

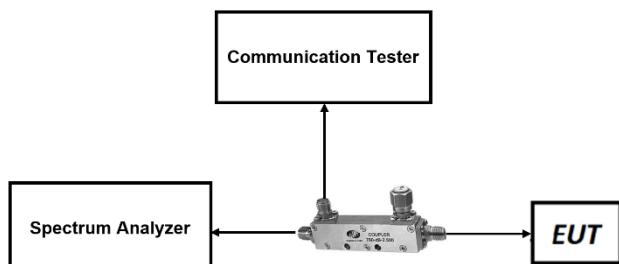


Figure 7-1. LTE Test Instrument & Measurement Setup

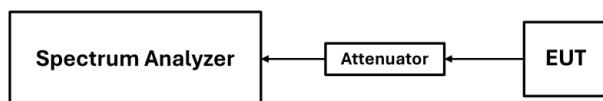


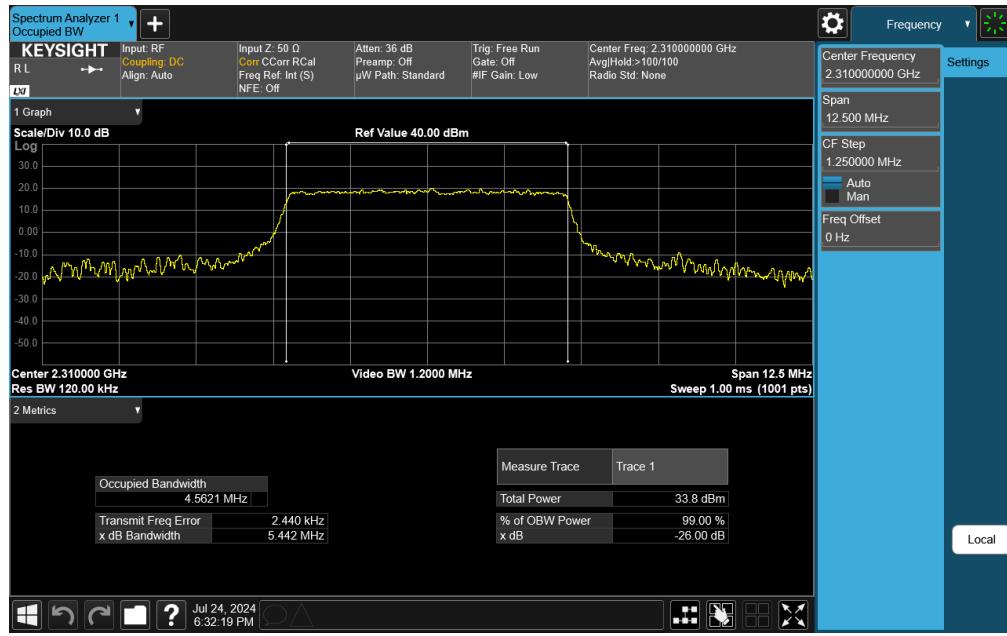
Figure 7-2. FR1 Test Instrument & Measurement Setup

### Test Notes

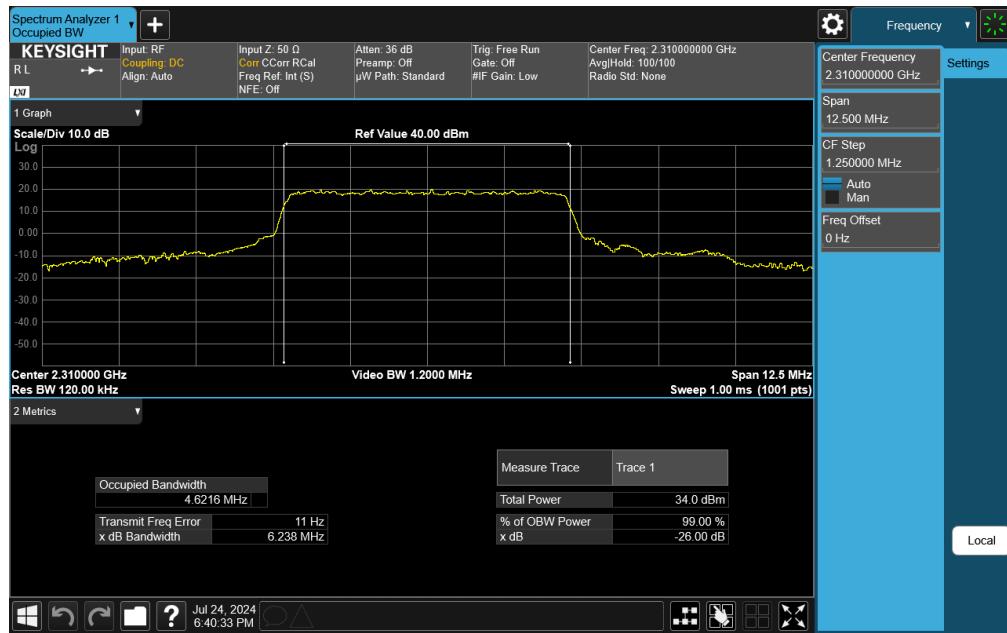
None.

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 17 of 427

## LTE Band 30

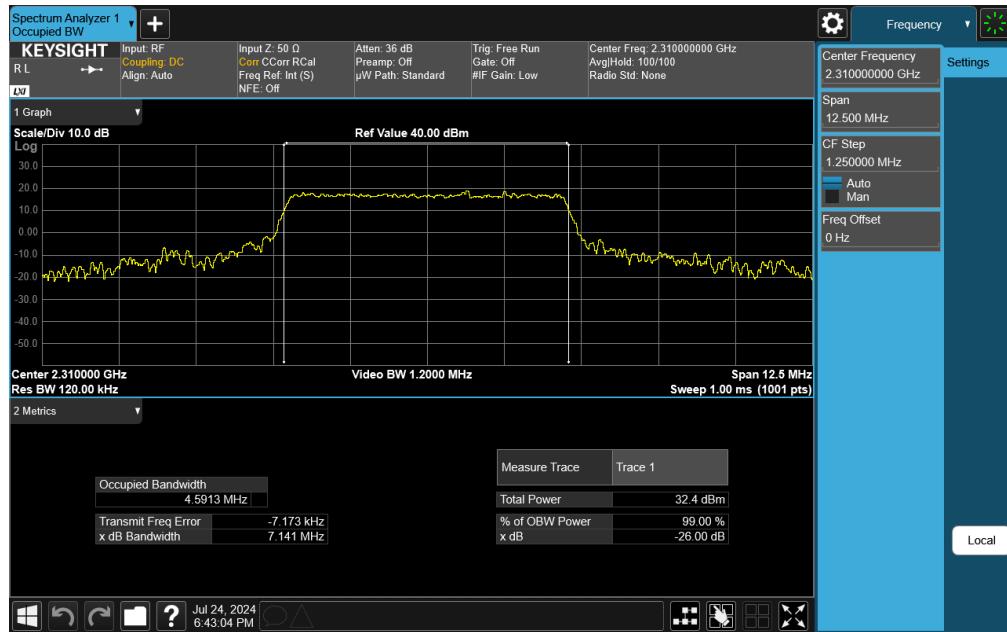


Plot 7-1. Occupied Bandwidth Plot (LTE Band 30 - 5MHz QPSK - Full RB)

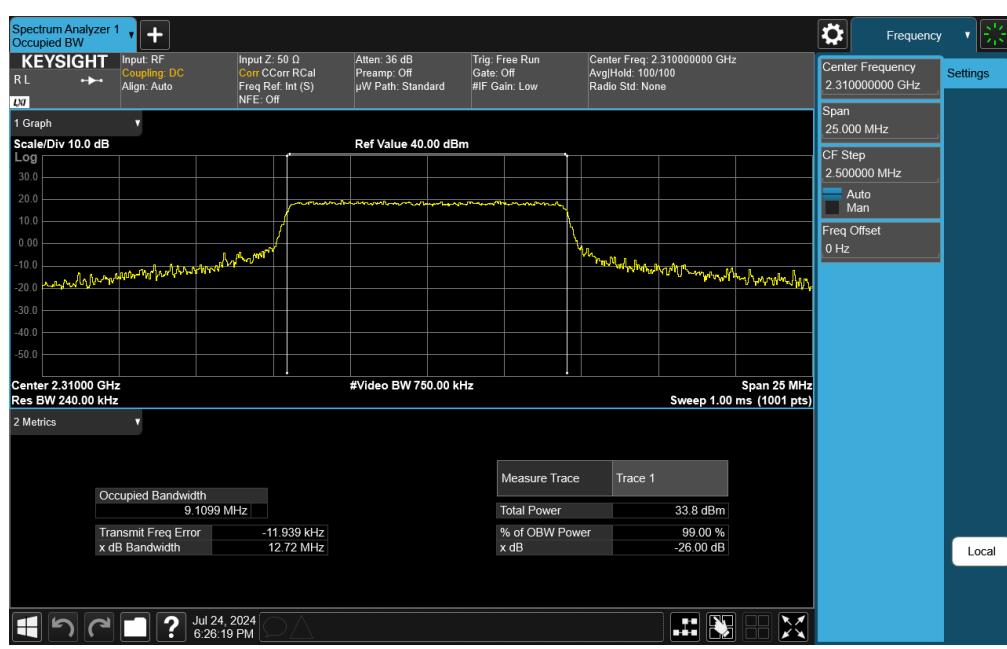
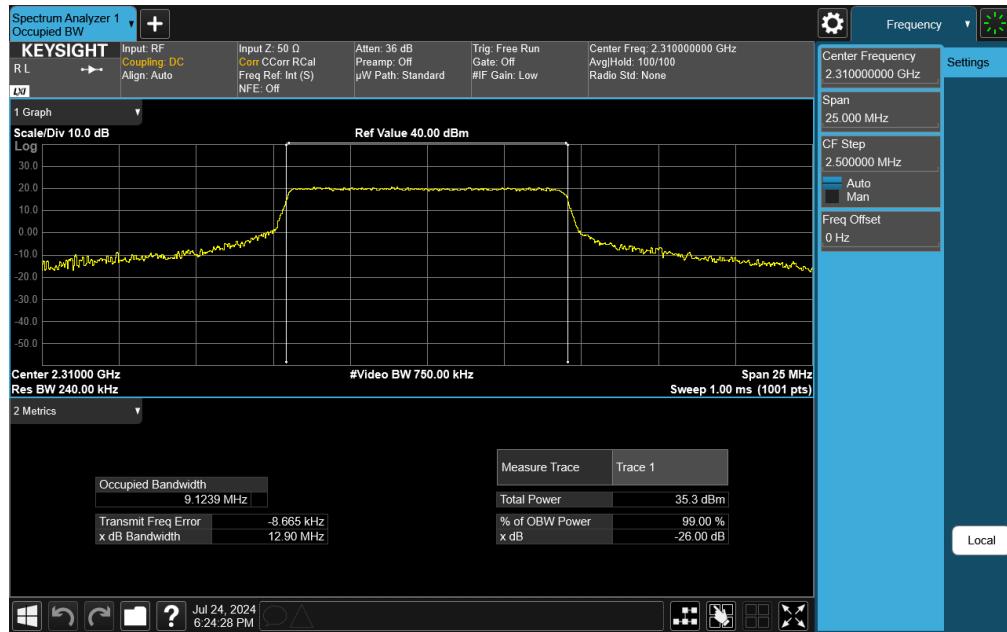


Plot 7-2. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 16-QAM - Full RB)

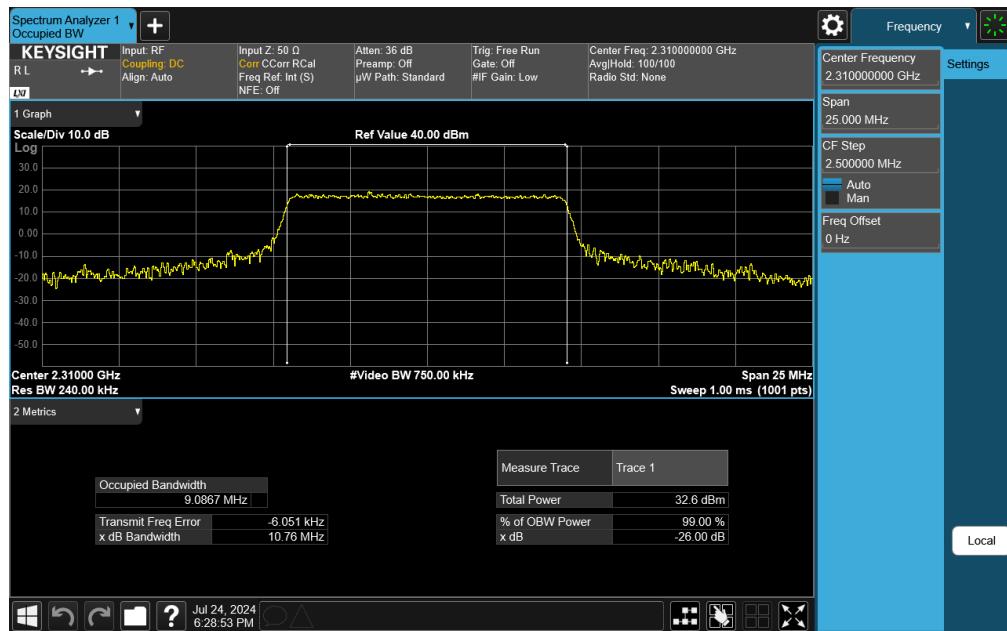
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 18 of 427



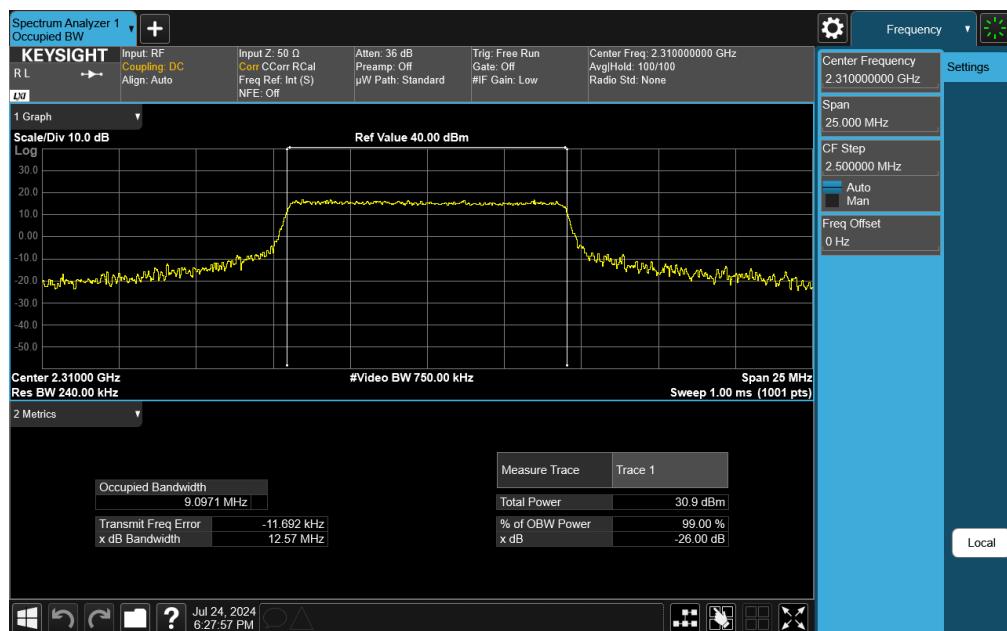
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 19 of 427



FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 20 of 427



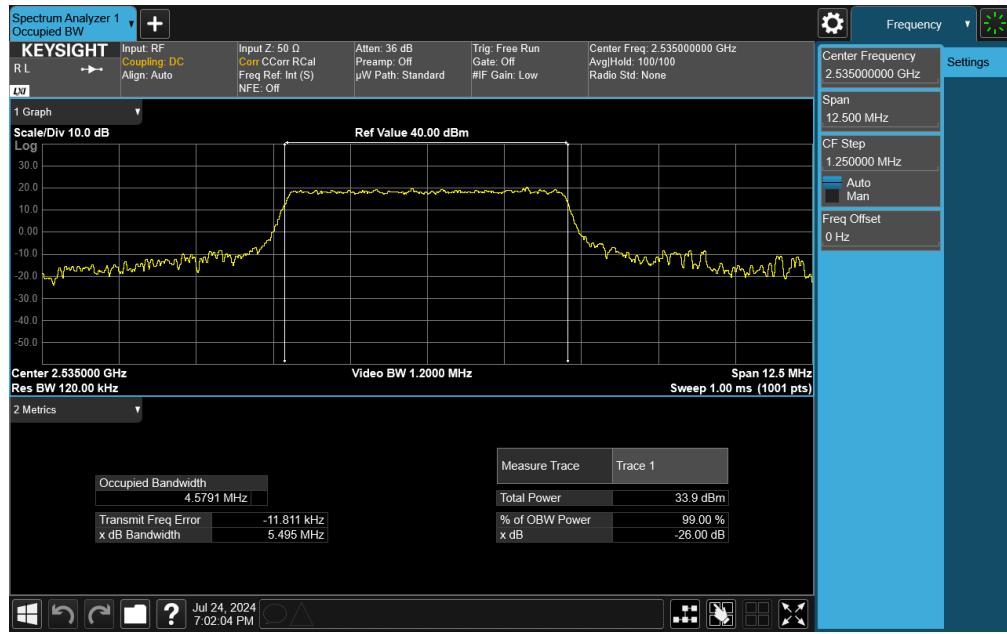
Plot 7-7. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 64-QAM - Full RB)

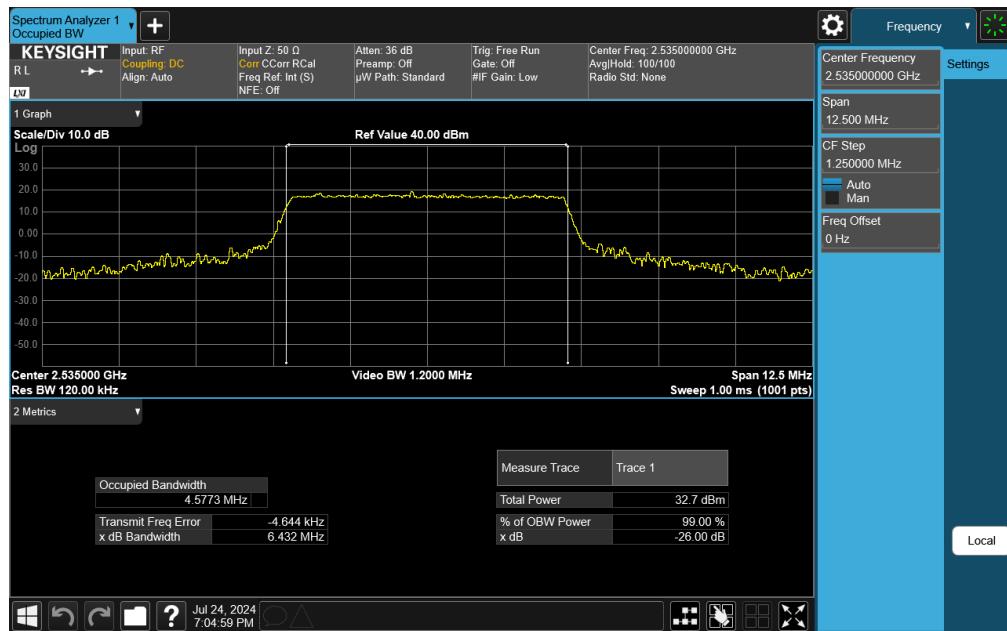


Plot 7-8. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 256-QAM - Full RB)

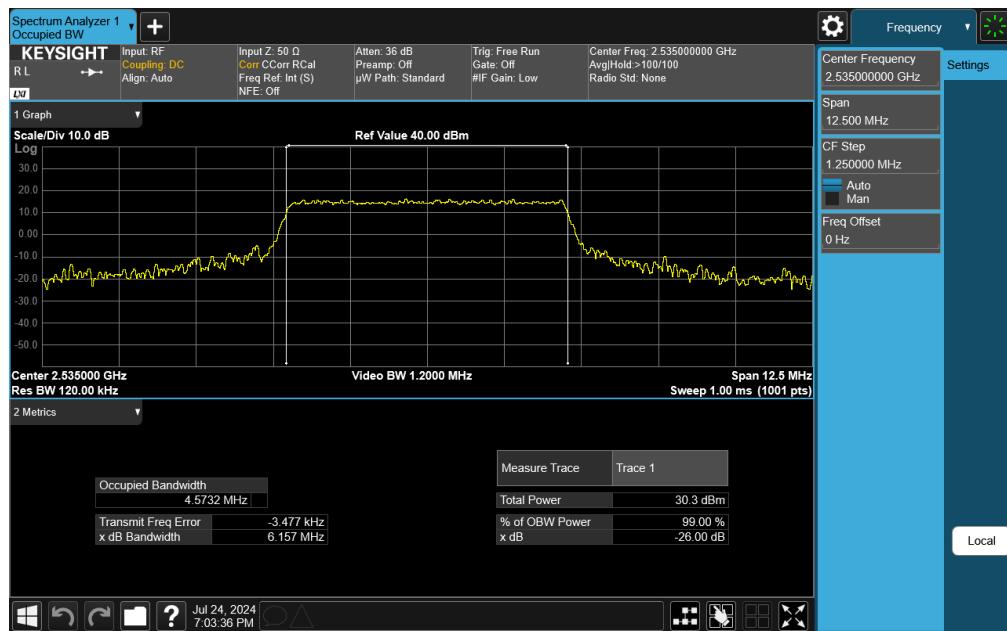
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 21 of 427

## LTE Band 7



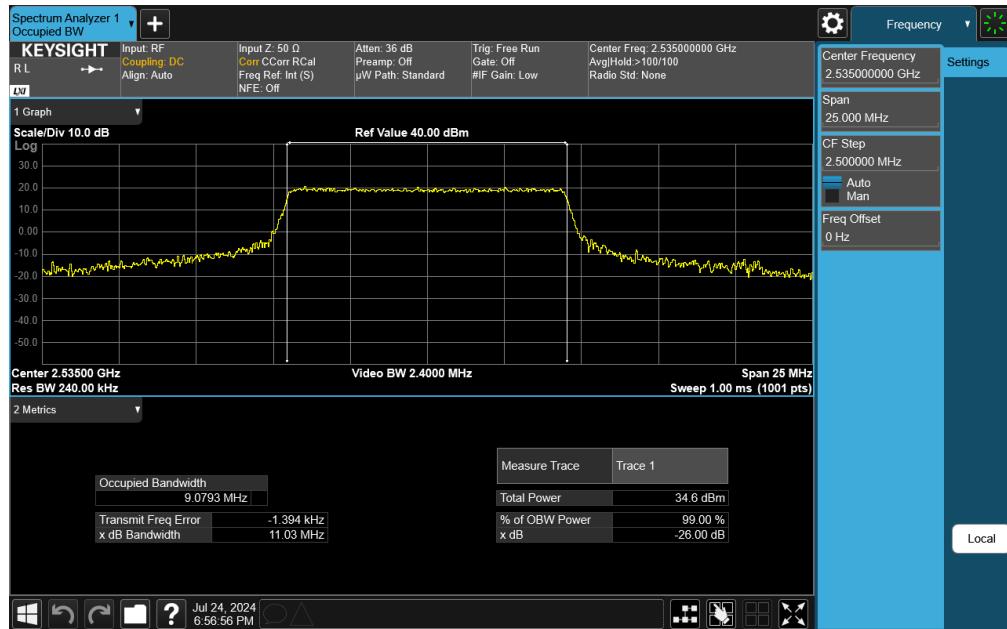


Plot 7-11. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 64-QAM - Full RB)

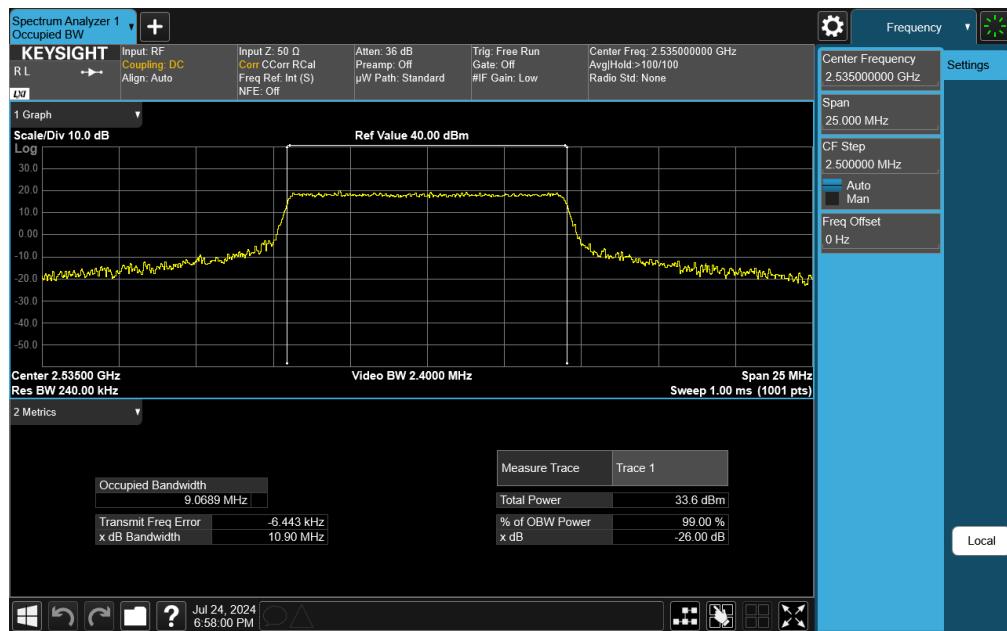


Plot 7-12. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 23 of 427

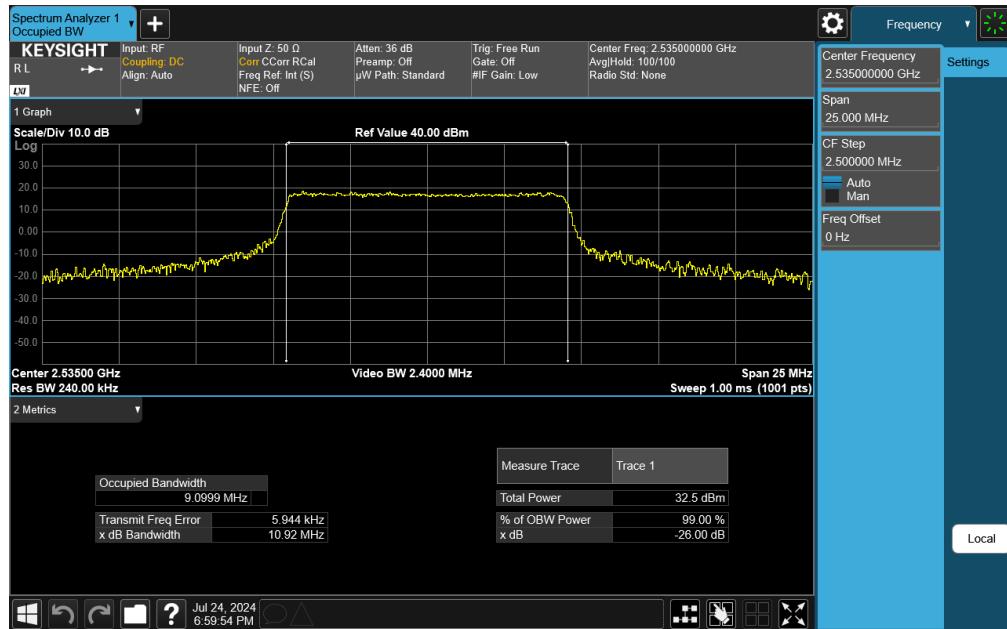


Plot 7-13. Occupied Bandwidth Plot (LTE Band 7 - 10MHz QPSK - Full RB)

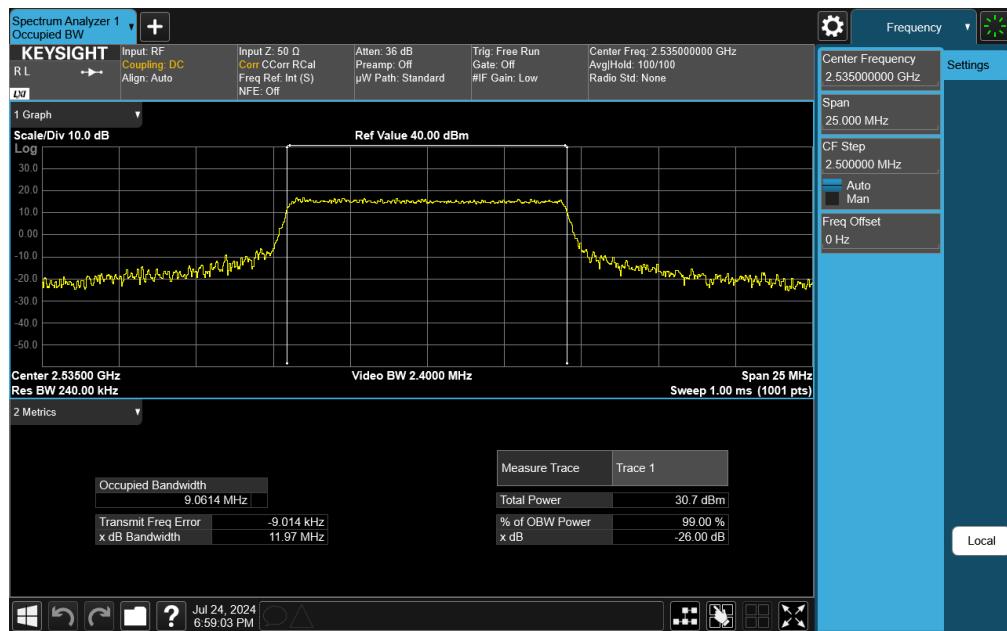


Plot 7-14. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 24 of 427

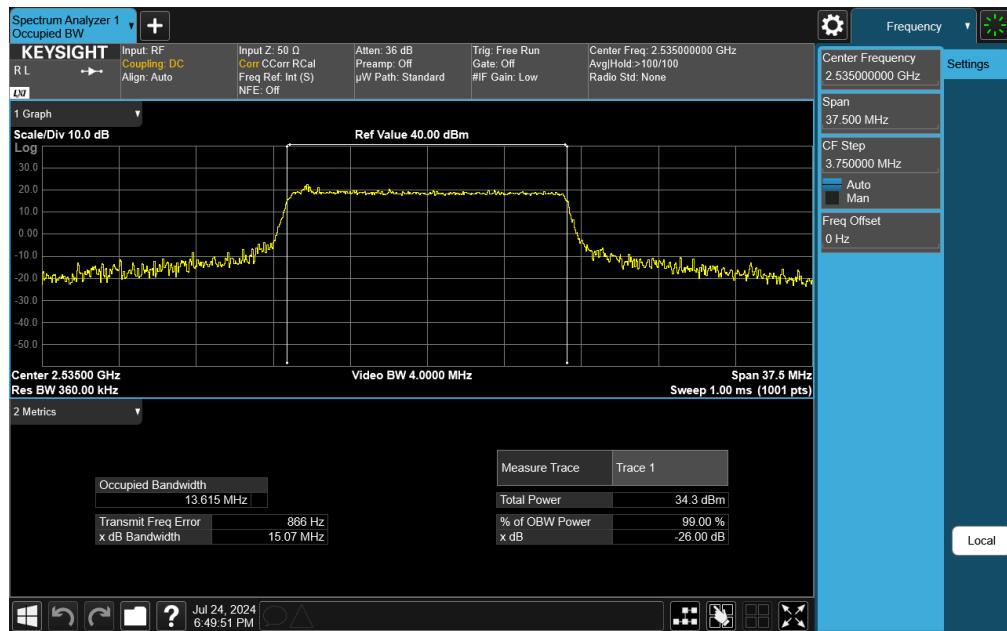


Plot 7-15. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 64-QAM - Full RB)

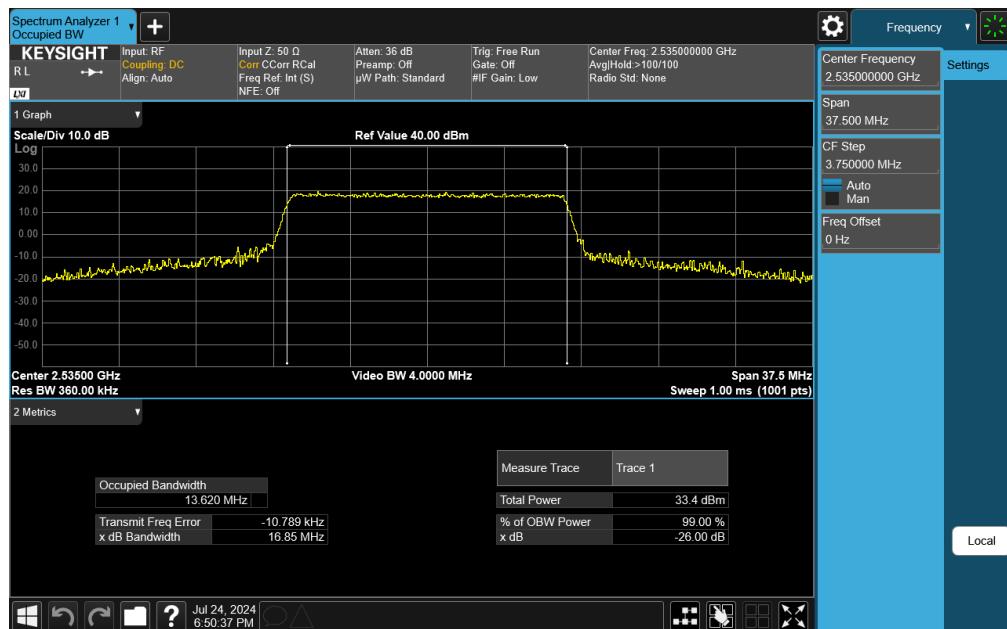


Plot 7-16. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 25 of 427

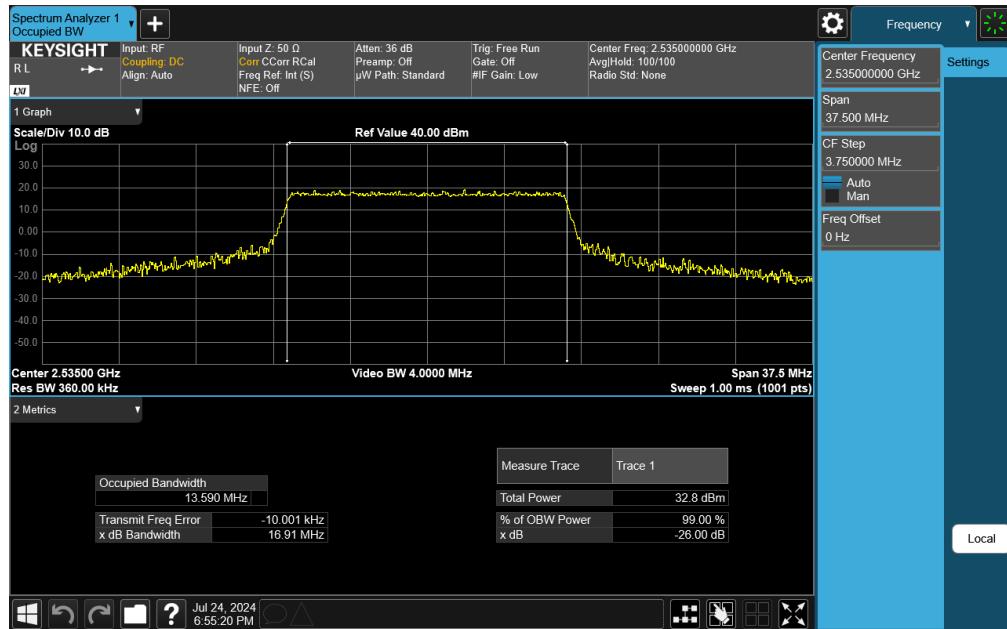


Plot 7-17. Occupied Bandwidth Plot (LTE Band 7 - 15MHz QPSK - Full RB)

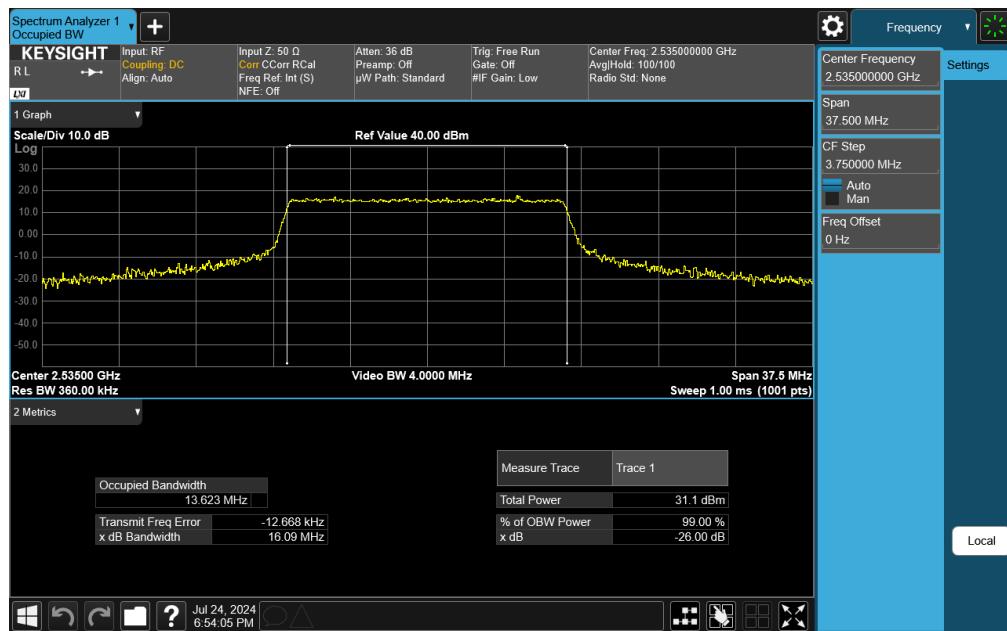


Plot 7-18. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 26 of 427

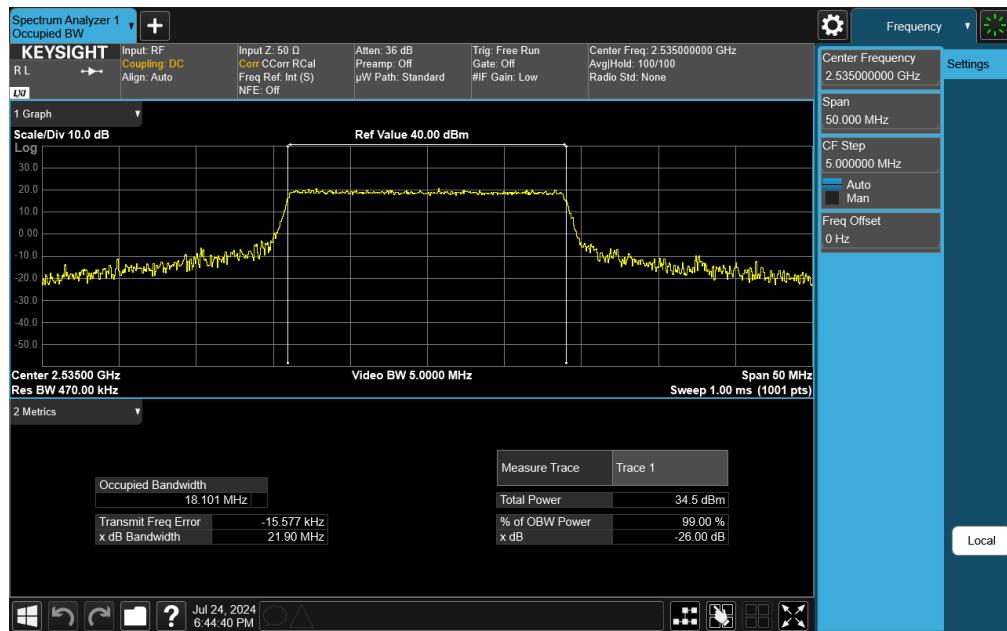


Plot 7-19. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 64-QAM - Full RB)

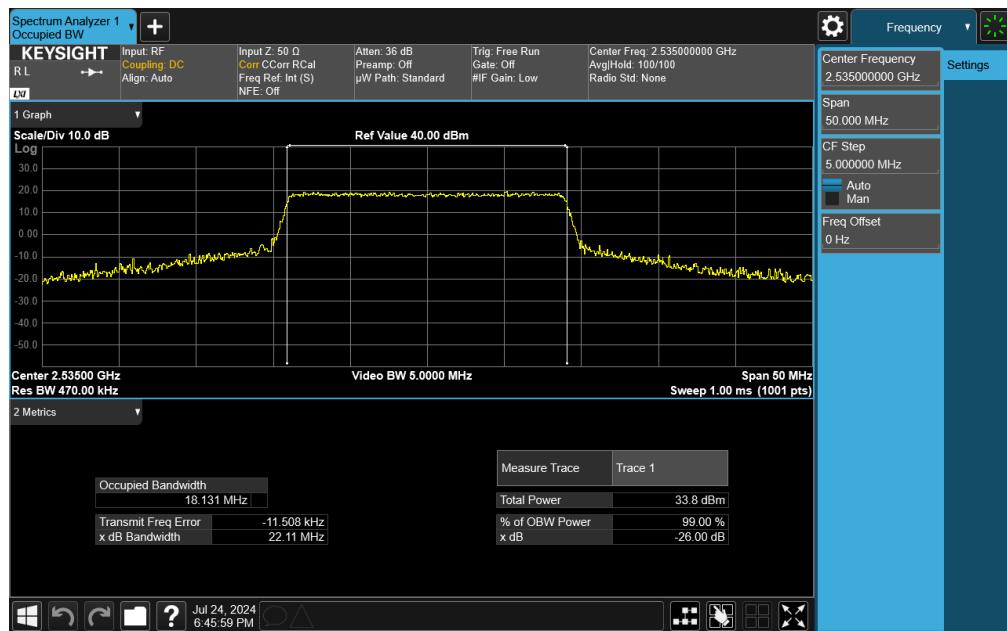


Plot 7-20. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 27 of 427

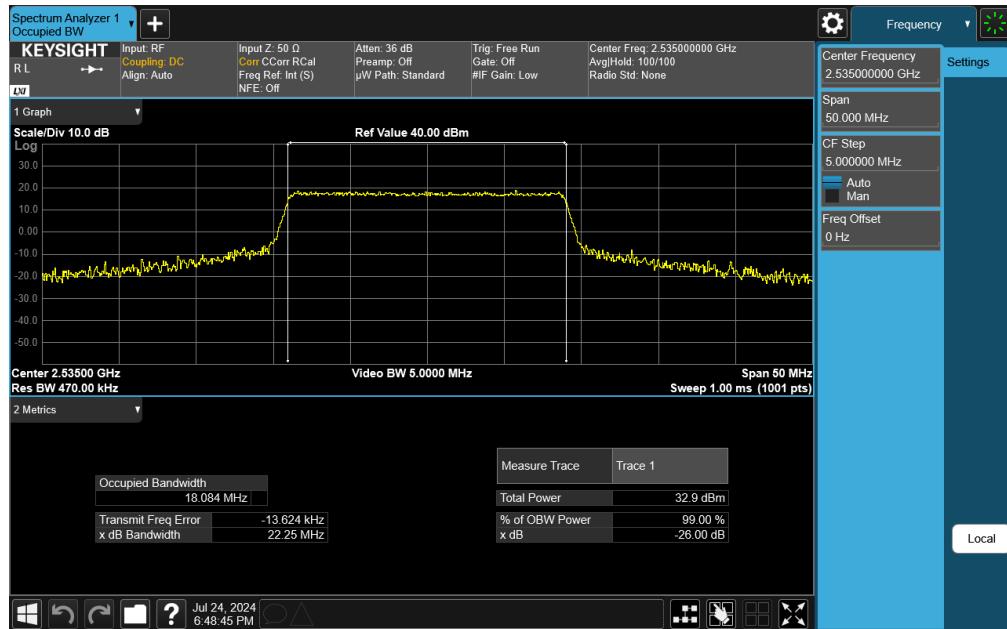


Plot 7-21. Occupied Bandwidth Plot (LTE Band 7 - 20MHz QPSK - Full RB)

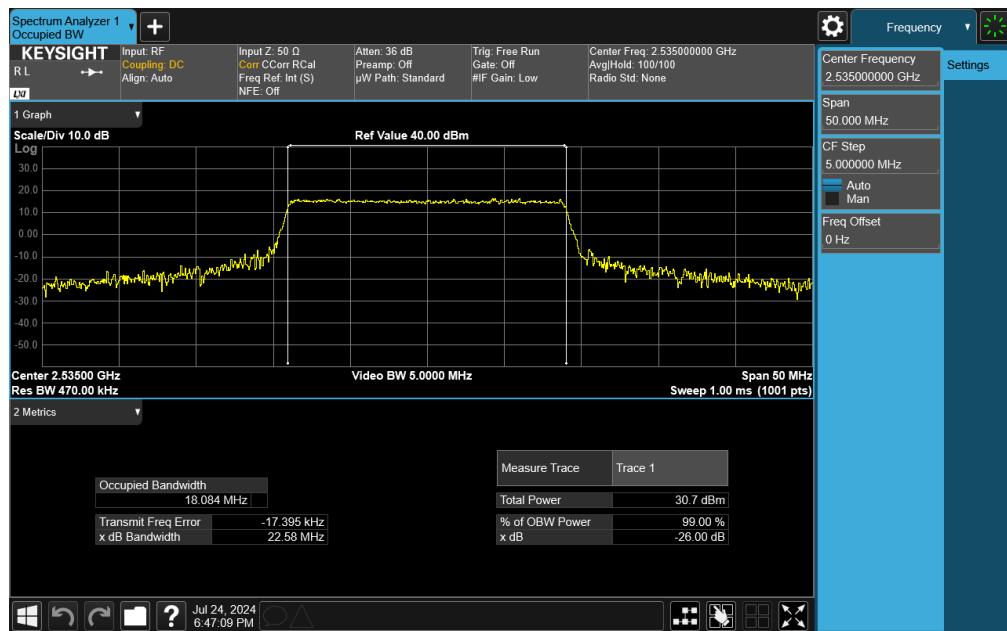


Plot 7-22. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 28 of 427



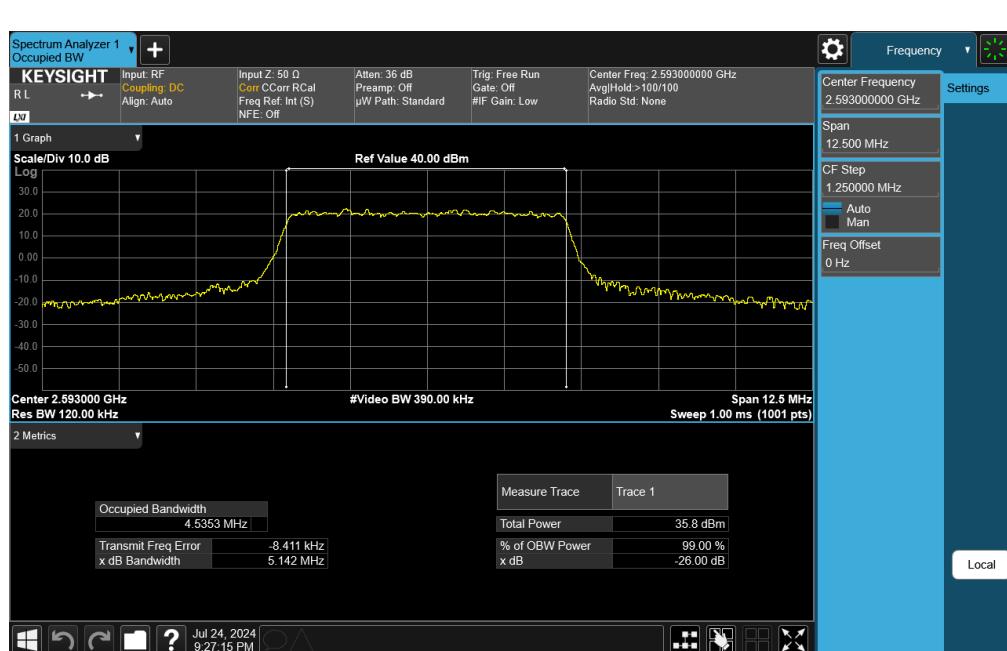
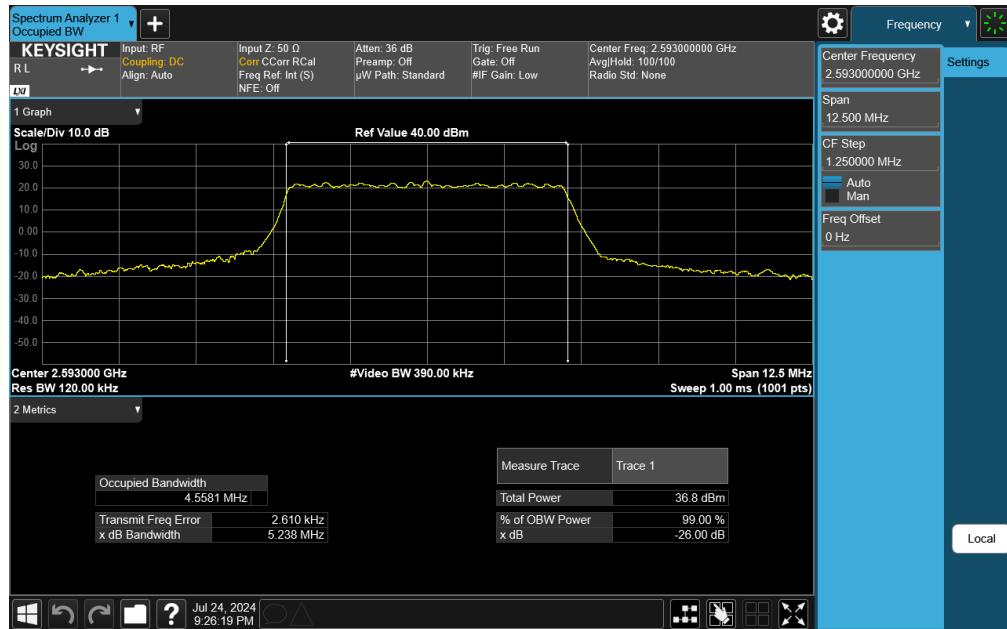
Plot 7-23. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 64-QAM - Full RB)



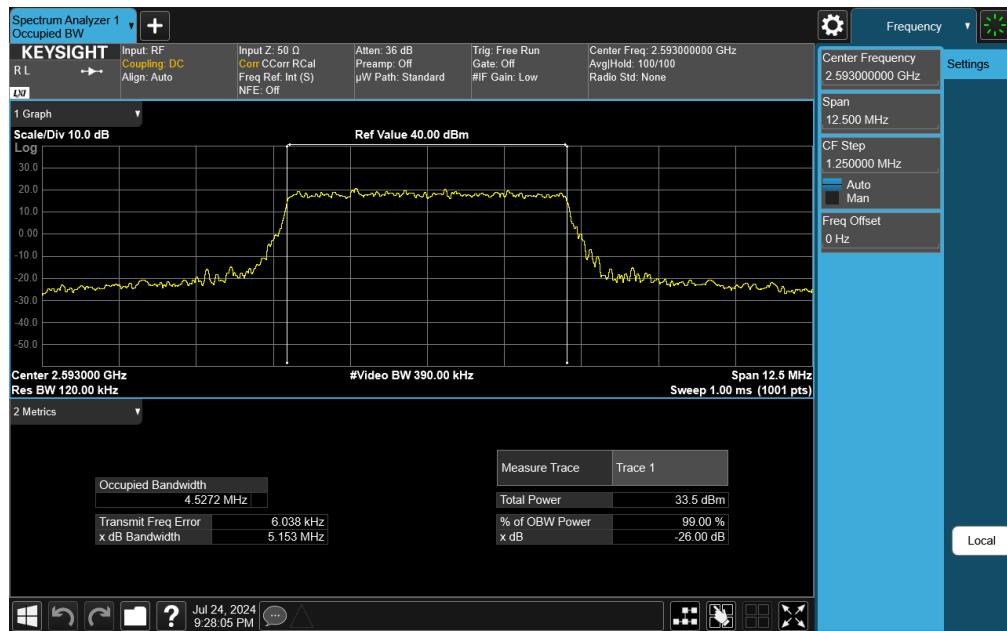
Plot 7-24. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 29 of 427

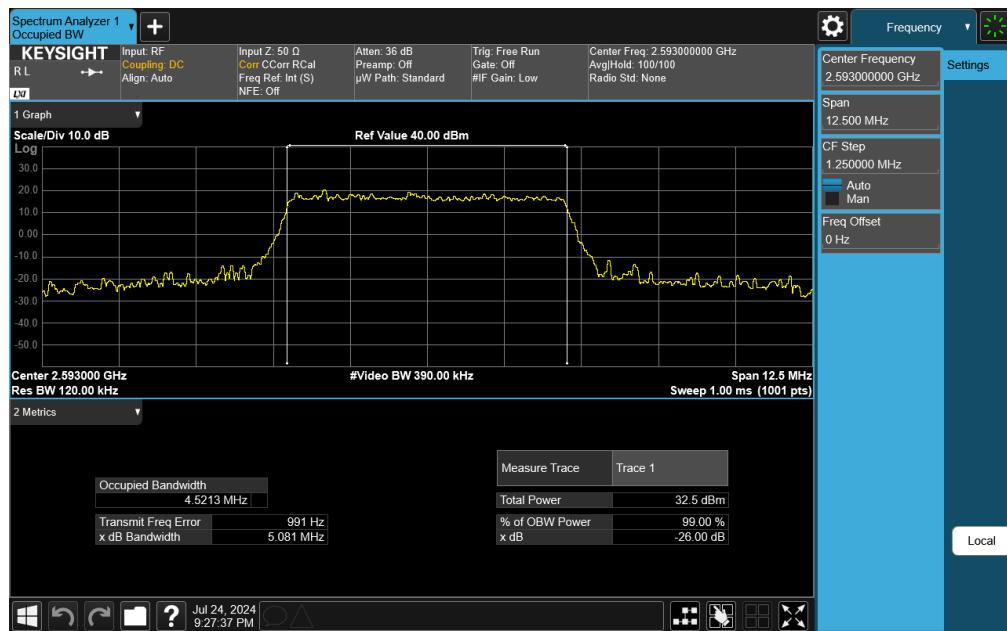
## LTE Band 41



FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 30 of 427

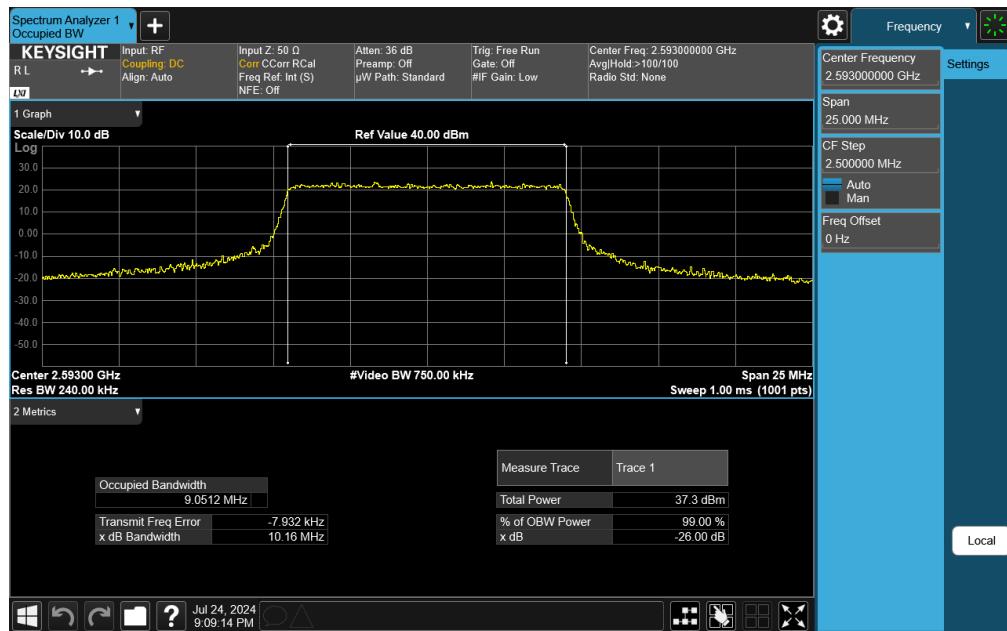


Plot 7-27. Occupied Bandwidth Plot (LTE Band 41 - 5MHz 64-QAM - Full RB)

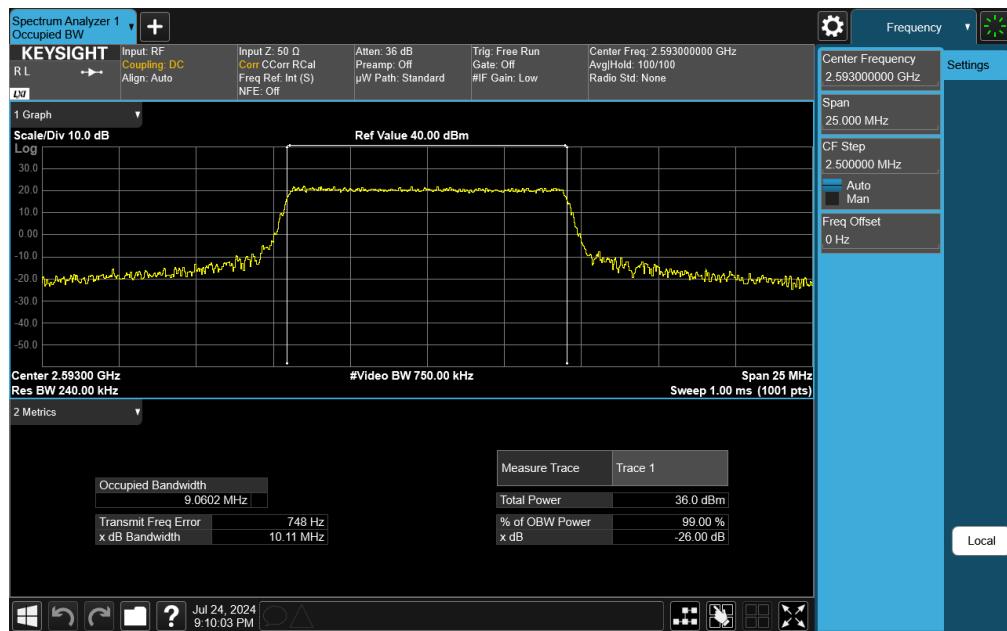


Plot 7-28. Occupied Bandwidth Plot (LTE Band 41 - 5MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 31 of 427

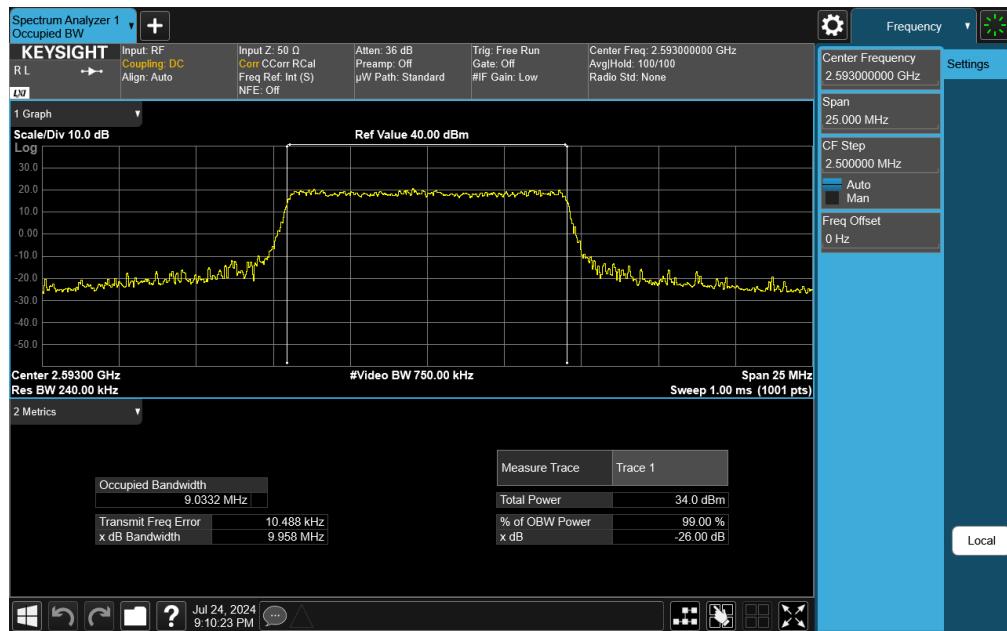


Plot 7-29. Occupied Bandwidth Plot (LTE Band 41 - 10MHz QPSK - Full RB)

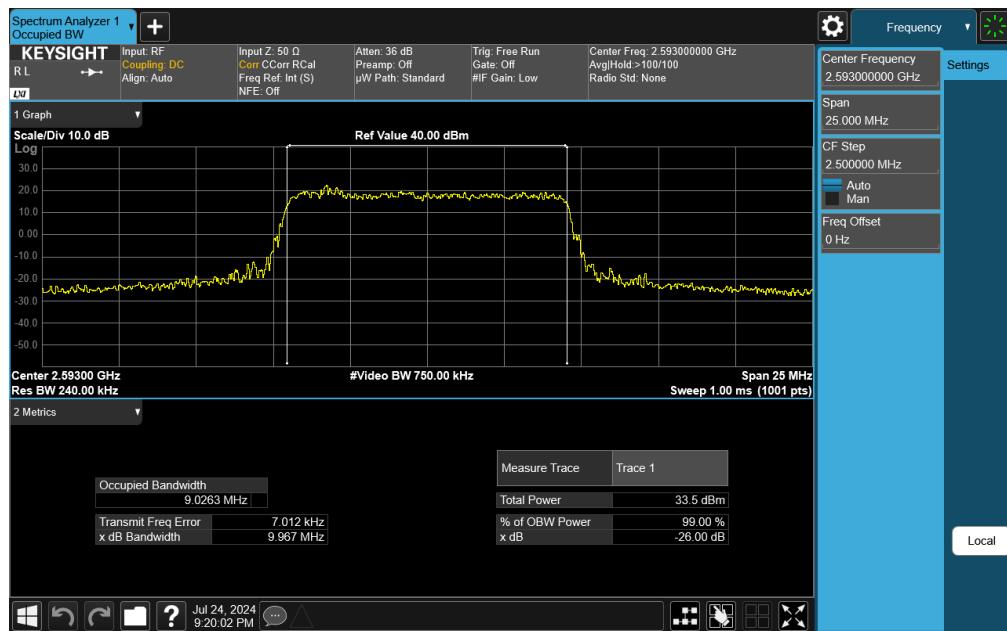


Plot 7-30. Occupied Bandwidth Plot (LTE Band 41 - 10MHz 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 32 of 427



Plot 7-31. Occupied Bandwidth Plot (LTE Band 41 - 10MHz 64-QAM - Full RB)

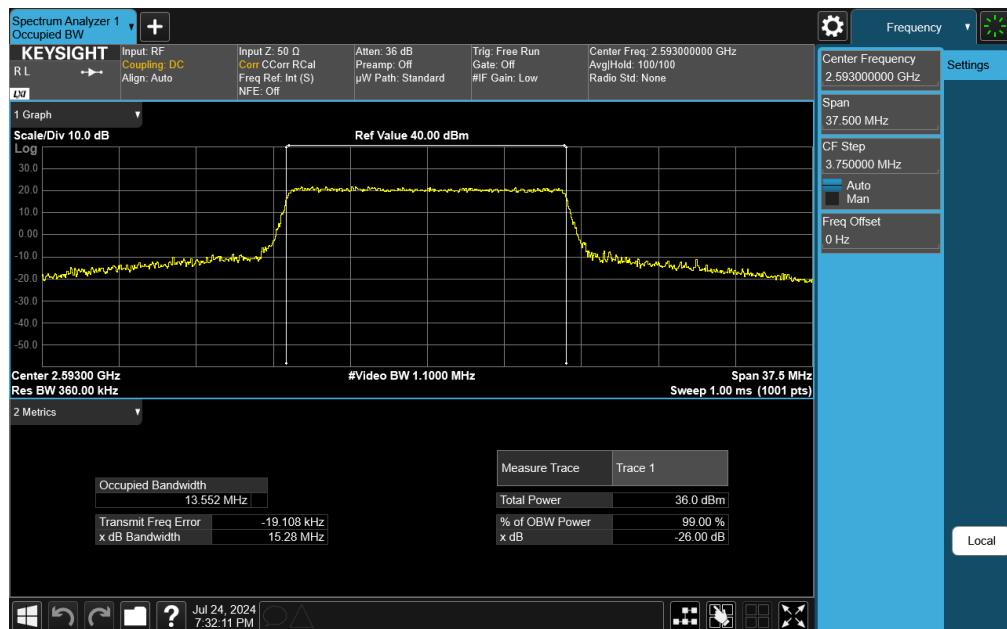


Plot 7-32. Occupied Bandwidth Plot (LTE Band 41 - 10MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 33 of 427

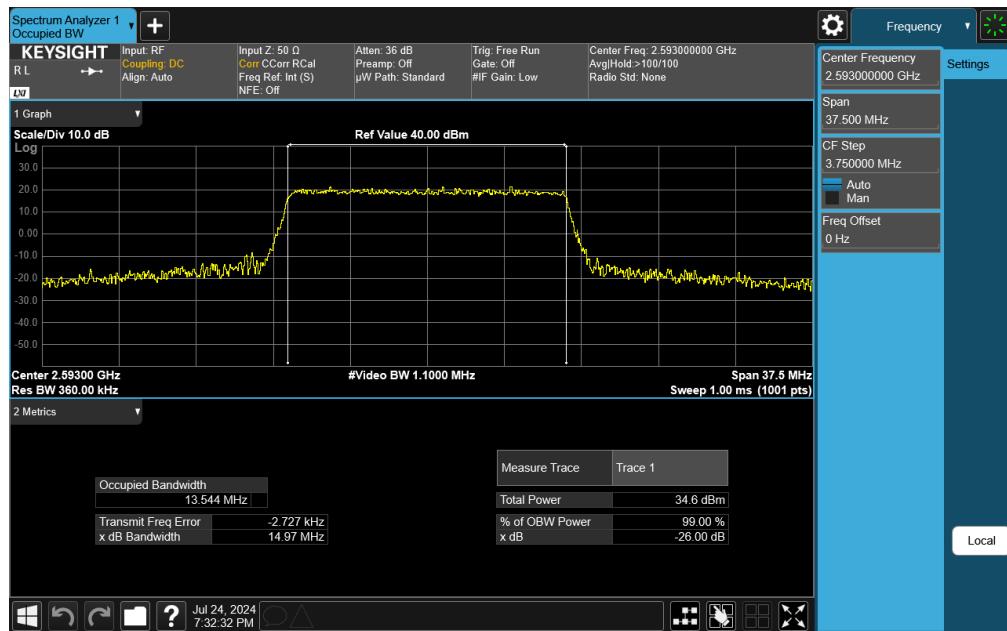


Plot 7-33. Occupied Bandwidth Plot (LTE Band 41 - 15MHz QPSK - Full RB)

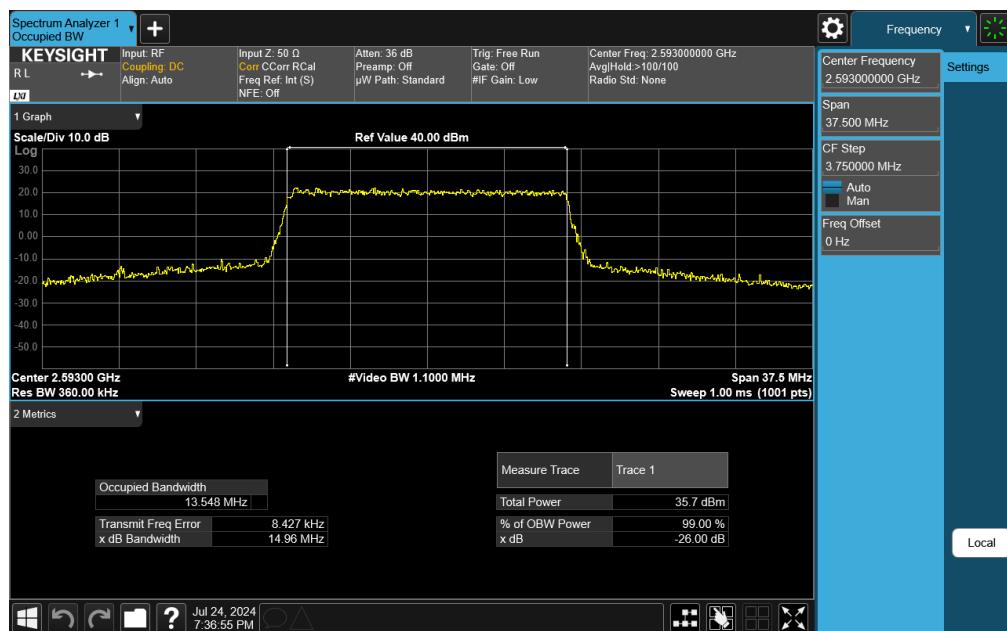


Plot 7-34. Occupied Bandwidth Plot (LTE Band 41 - 15MHz 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 34 of 427

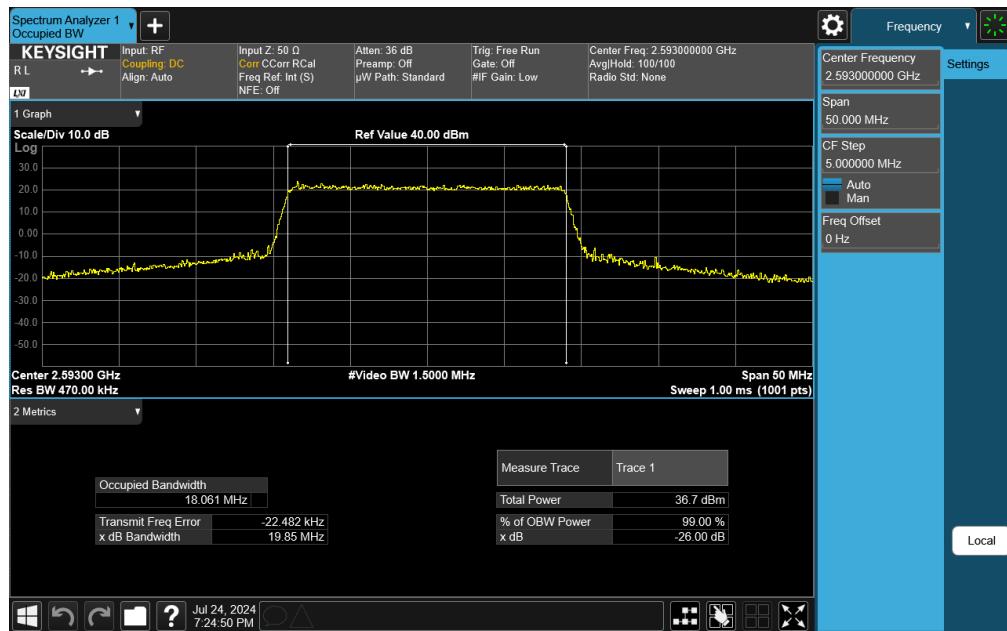


Plot 7-35. Occupied Bandwidth Plot (LTE Band 41 - 15MHz 64-QAM - Full RB)

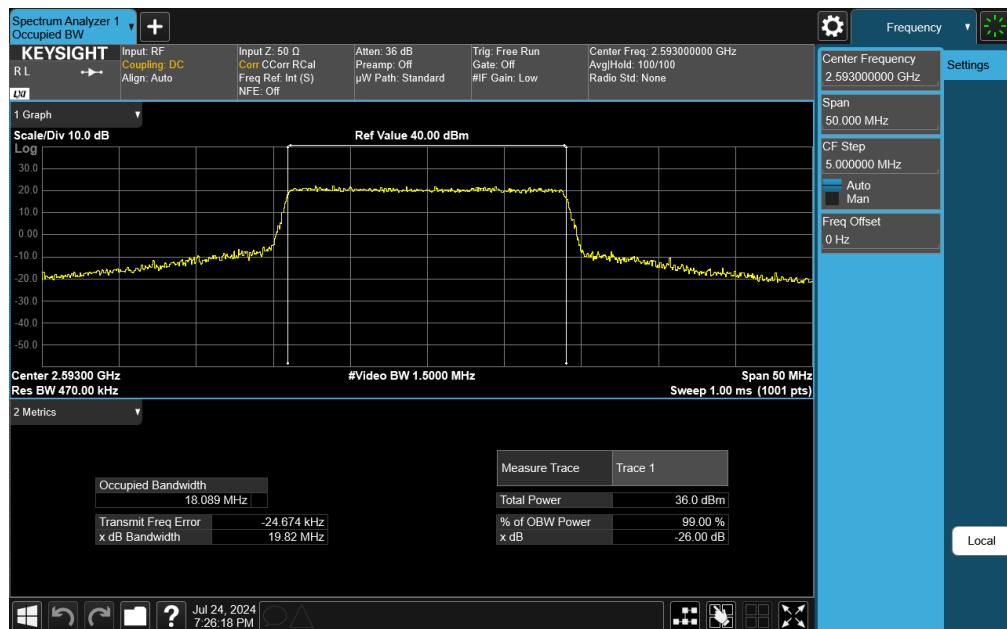


Plot 7-36. Occupied Bandwidth Plot (LTE Band 41 - 15MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 35 of 427

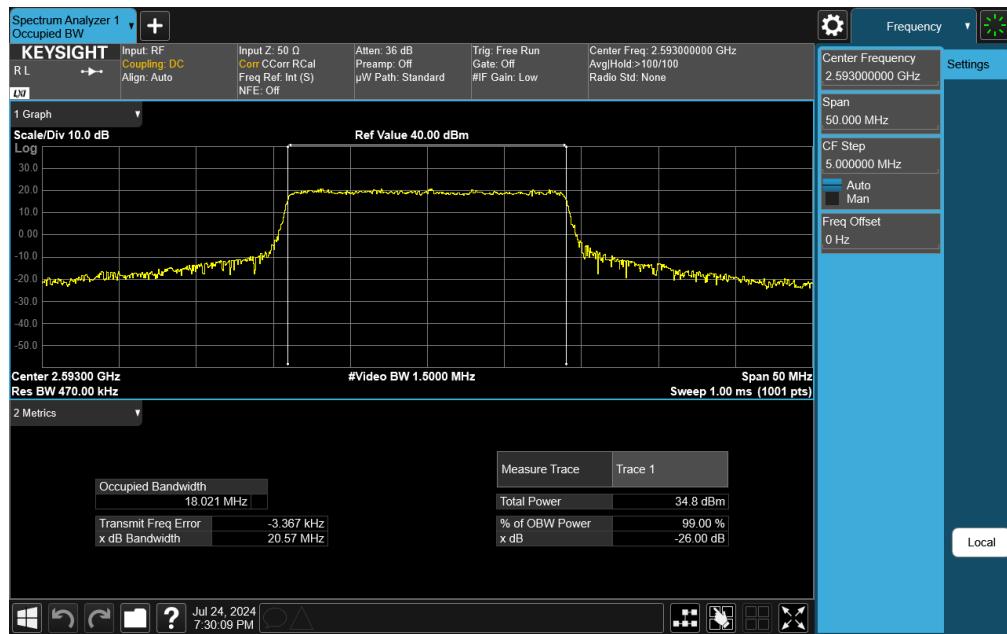


Plot 7-37. Occupied Bandwidth Plot (LTE Band 41 - 20MHz QPSK - Full RB)

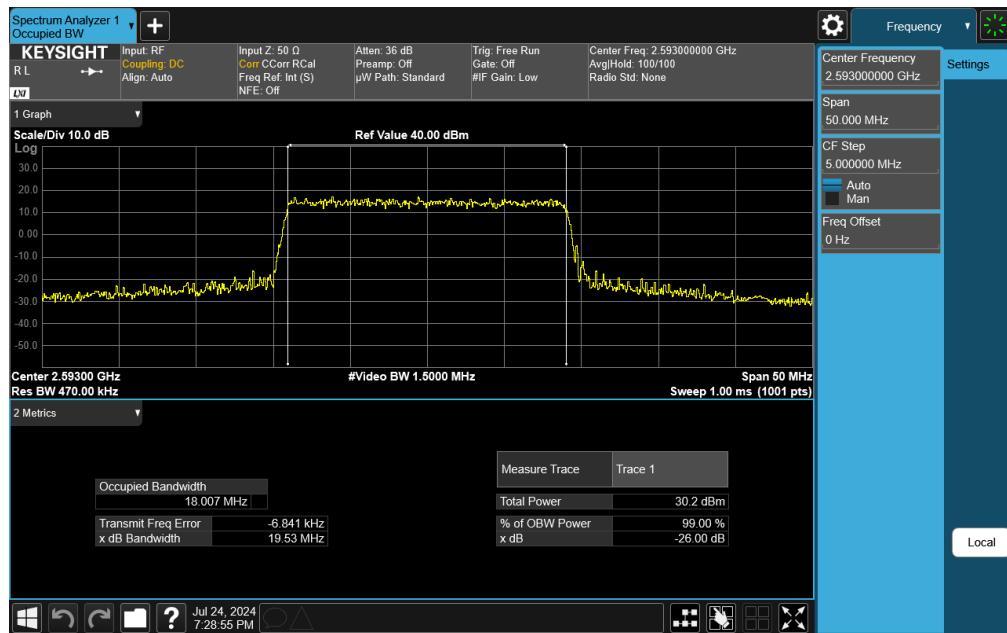


Plot 7-38. Occupied Bandwidth Plot (LTE Band 41 - 20MHz 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 36 of 427



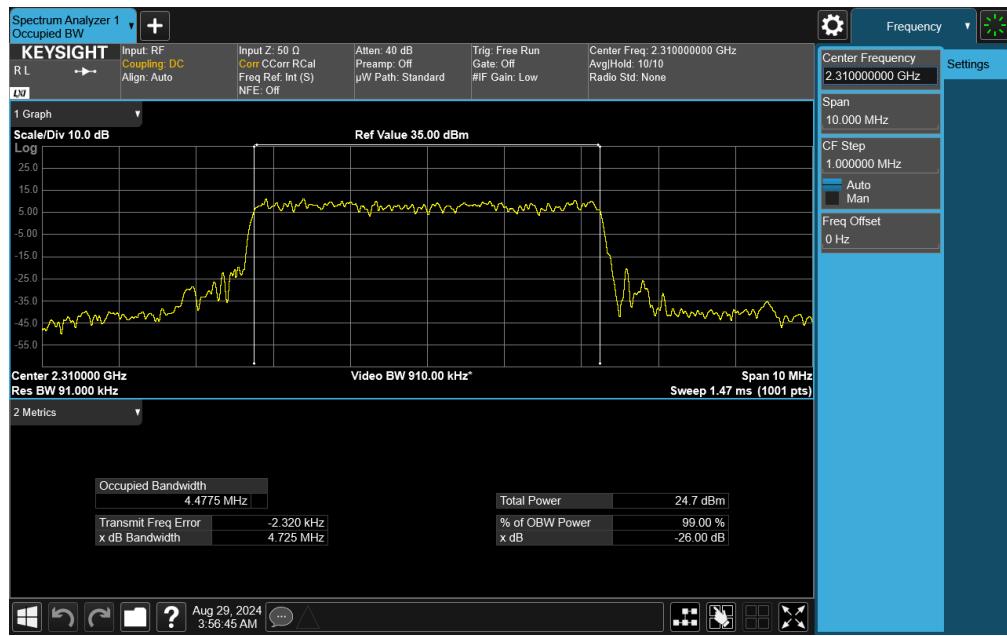
Plot 7-39. Occupied Bandwidth Plot (LTE Band 41 - 20MHz 64-QAM - Full RB)



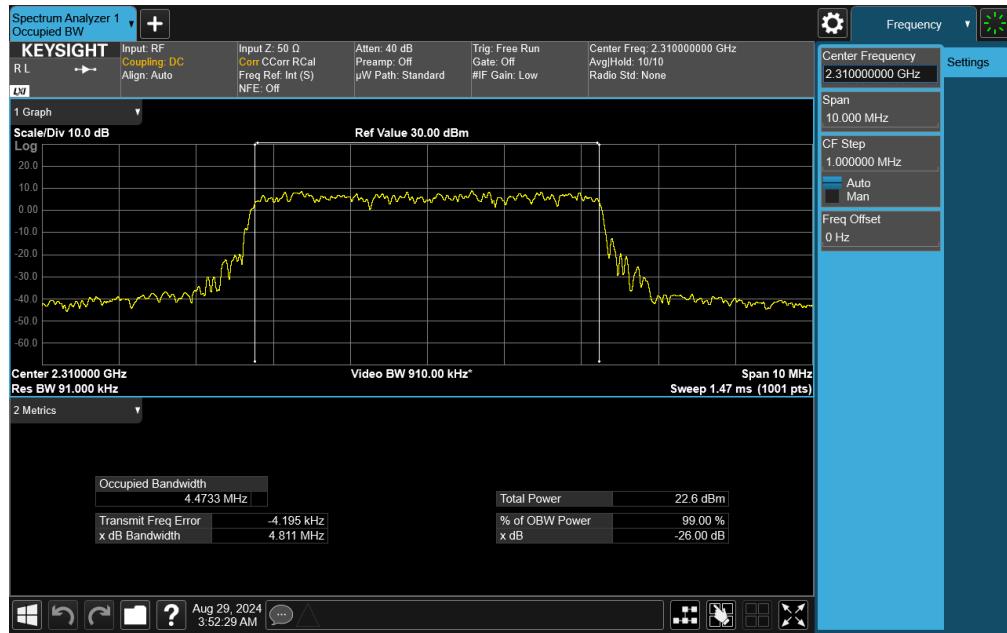
Plot 7-40. Occupied Bandwidth Plot (LTE Band 41 - 20MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 37 of 427

## NR Band n30



Plot 7-41. Occupied Bandwidth Plot (NR Band n30 - 5MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB)

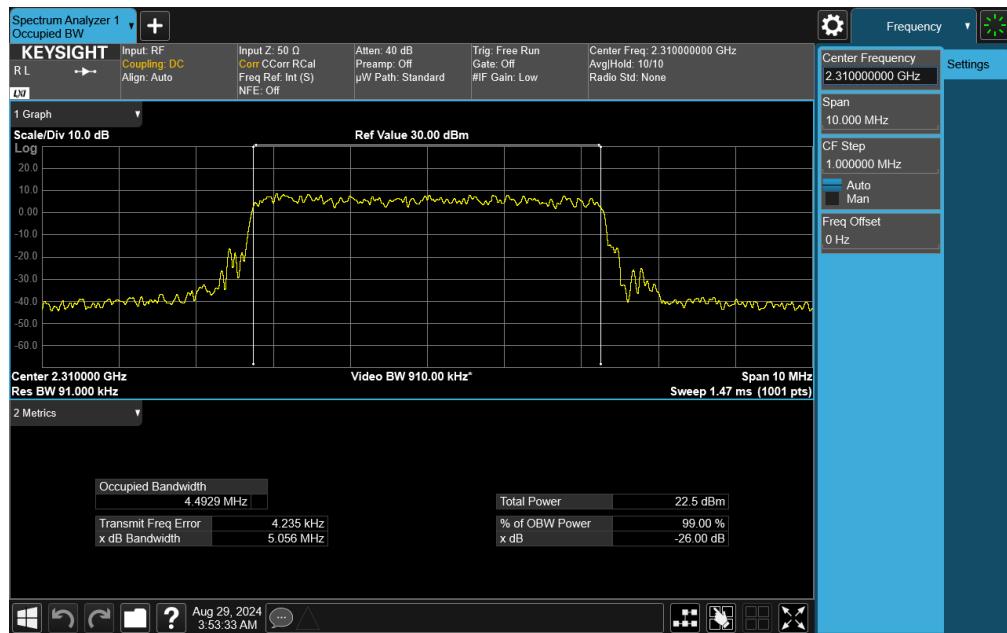


Plot 7-42. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 38 of 427

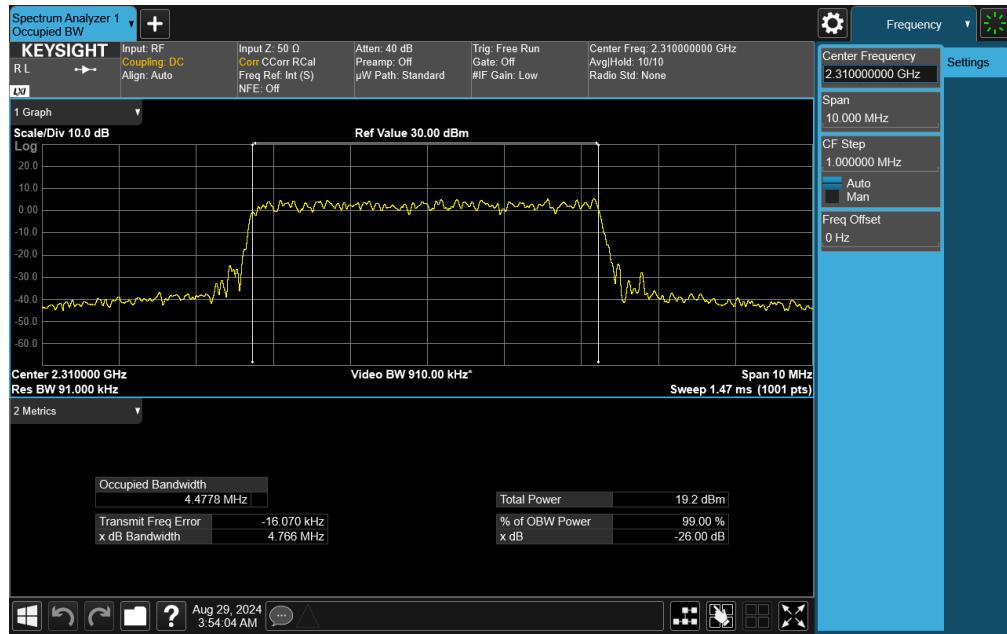


Plot 7-43. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM 16-QAM - Full RB)



Plot 7-44. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 39 of 427

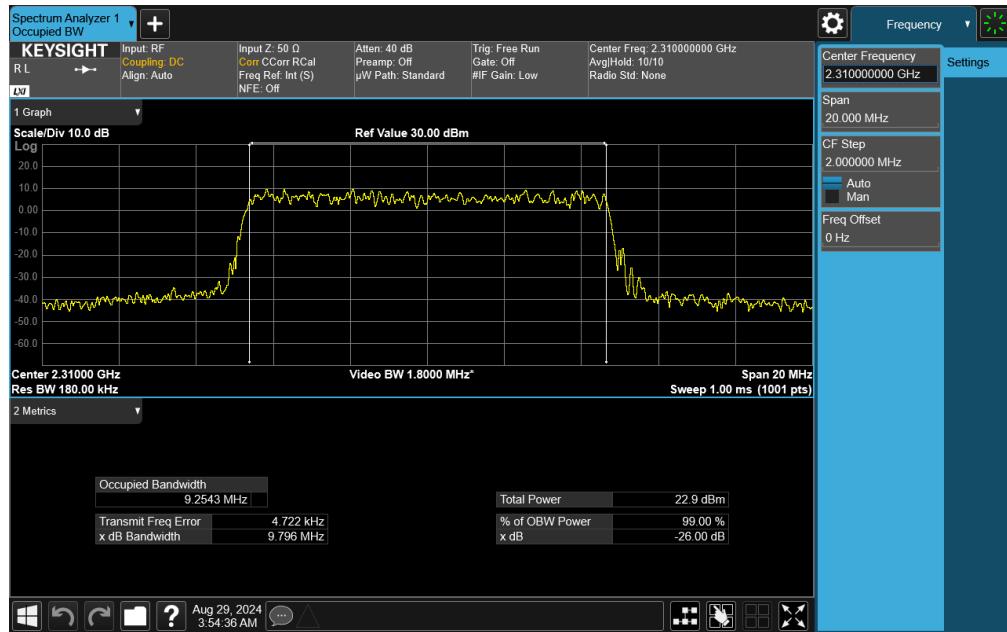


Plot 7-45. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM 256-QAM - Full RB)

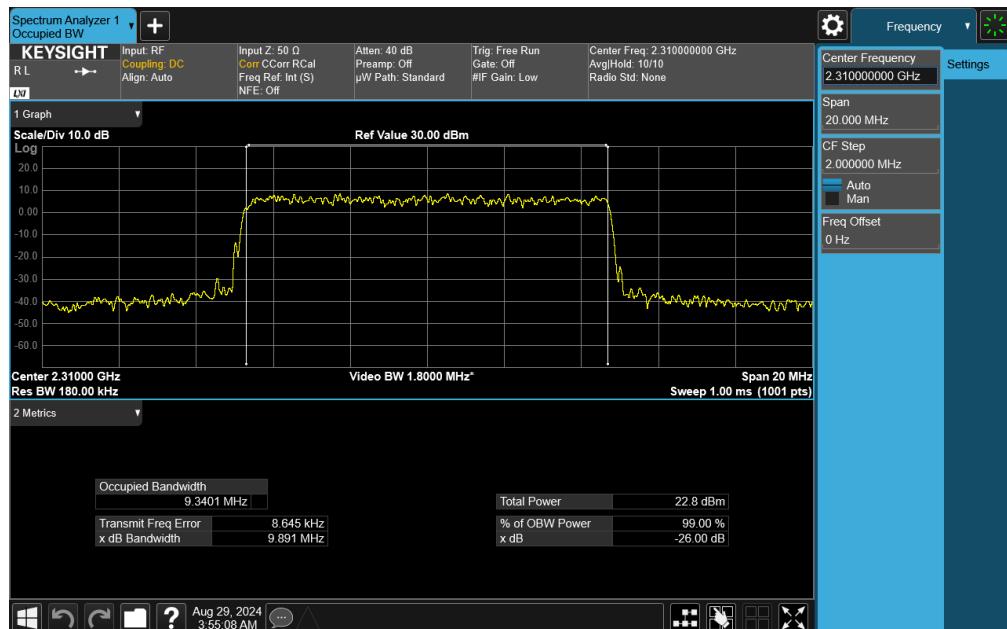


Plot 7-46. Occupied Bandwidth Plot (NR Band n30 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 40 of 427

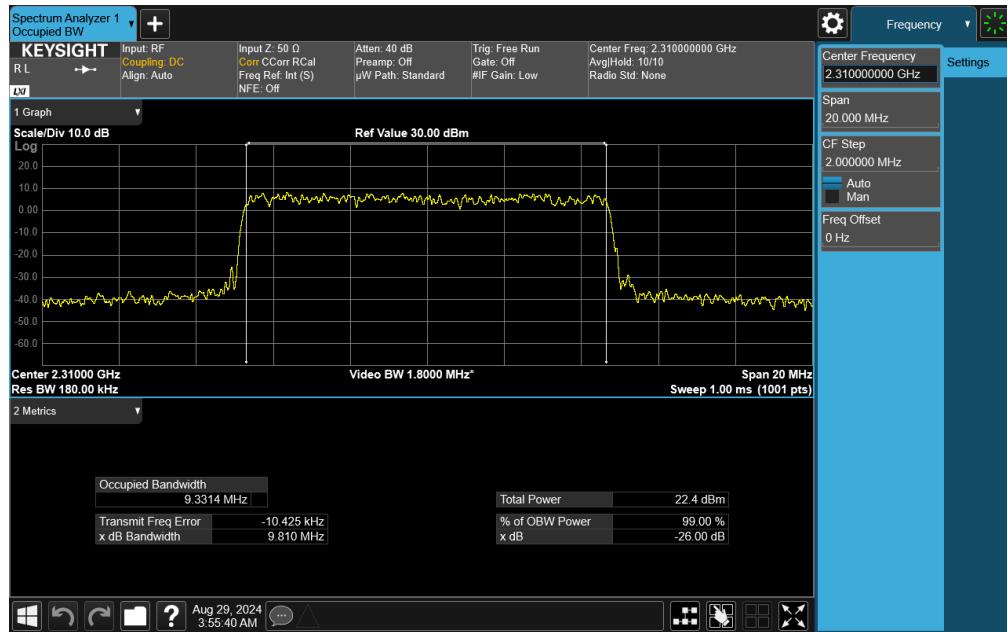


Plot 7-47. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM QPSK - Full RB)

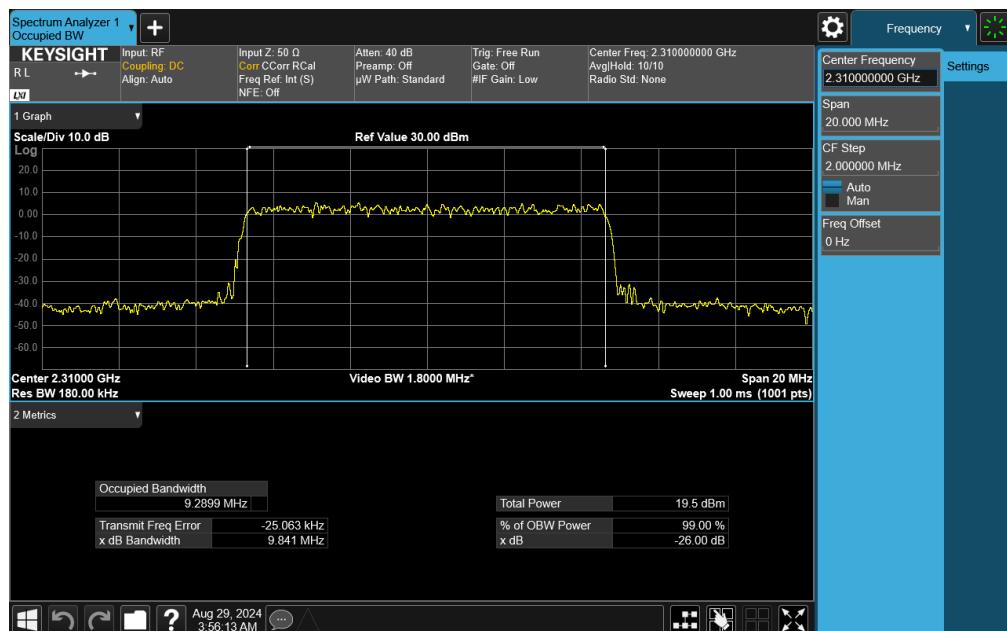


Plot 7-48. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 41 of 427



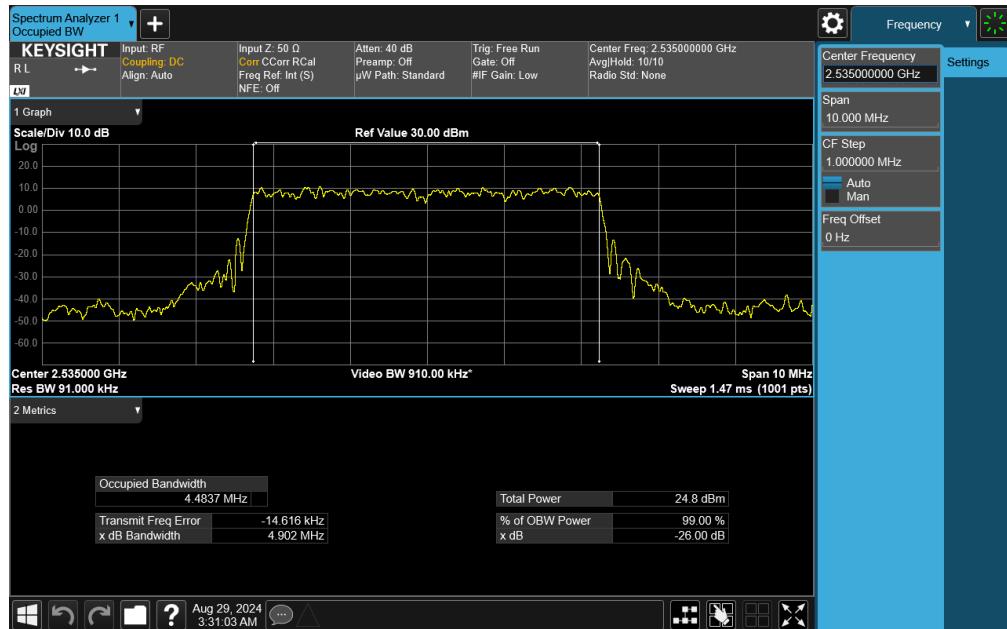
Plot 7-49. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM 64-QAM - Full RB)



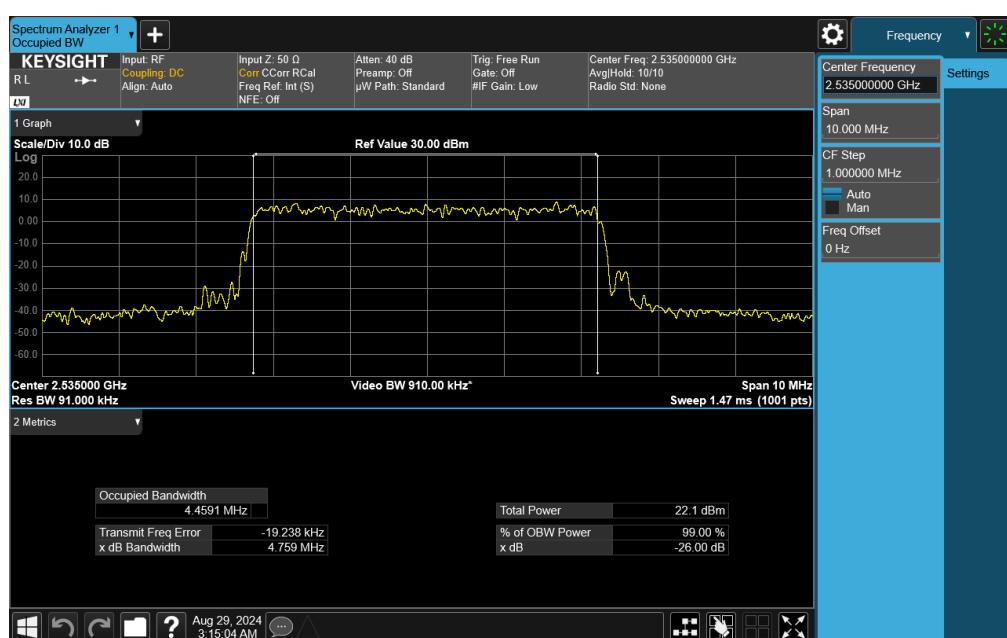
Plot 7-50. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 42 of 427

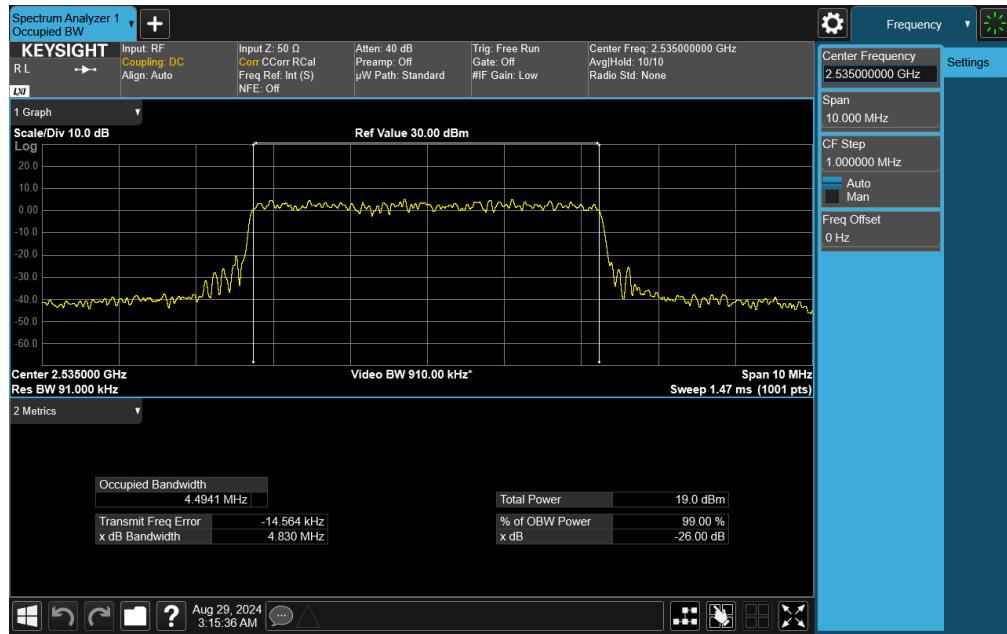
## NR Band n7



FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 43 of 427



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Plot 7-55. Occupied Bandwidth Plot (NR Band n7 - 5MHz CP-OFDM 256-QAM - Full RB)



Plot 7-56. Occupied Bandwidth Plot (NR Band n7 - 10MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 45 of 427



Plot 7-57. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM QPSK - Full RB)



Plot 7-58. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 46 of 427



Plot 7-59. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM 64-QAM - Full RB)



Plot 7-60. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 47 of 427



Plot 7-61. Occupied Bandwidth Plot (NR Band n7 - 15MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB)

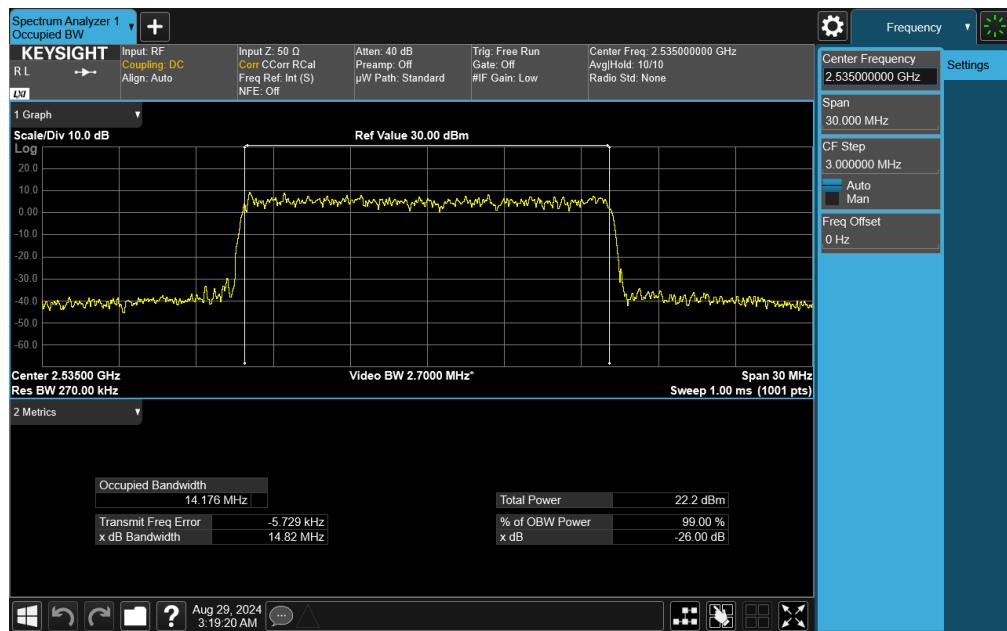


Plot 7-62. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 48 of 427



**Plot 7-63. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM 16-QAM - Full RB)**

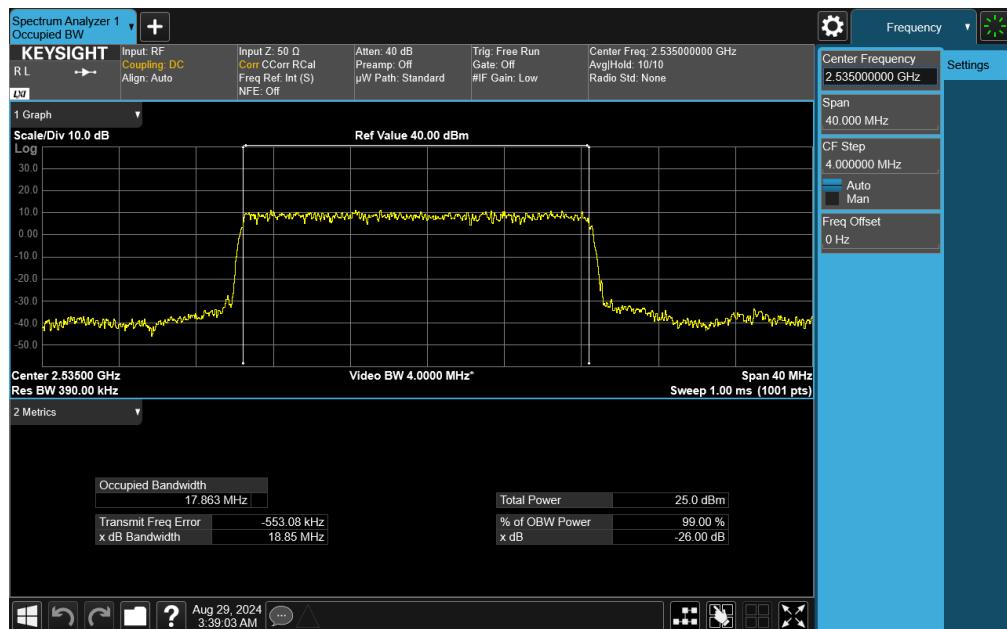


**Plot 7-64. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM 64-QAM - Full RB)**

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 49 of 427

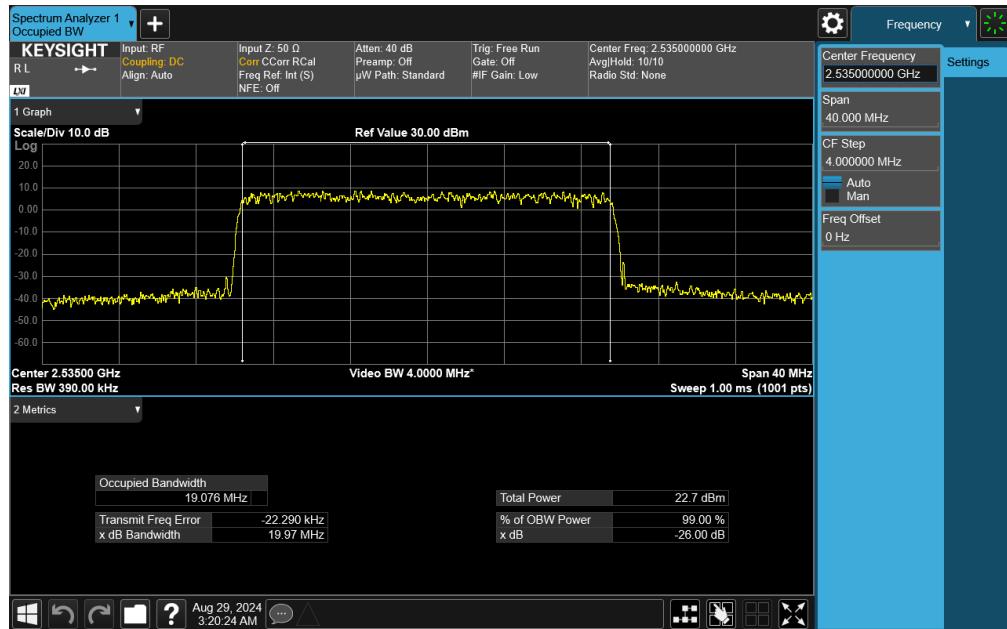


Plot 7-65. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM 256-QAM - Full RB)

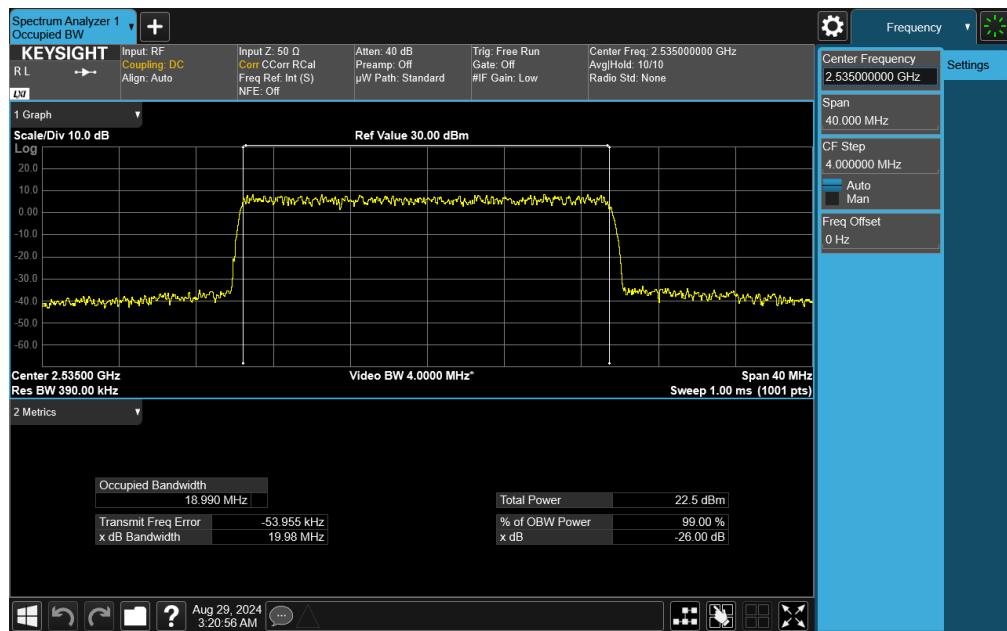


Plot 7-66. Occupied Bandwidth Plot (NR Band n7 - 20MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 50 of 427



Plot 7-67. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM QPSK - Full RB)



Plot 7-68. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 51 of 427

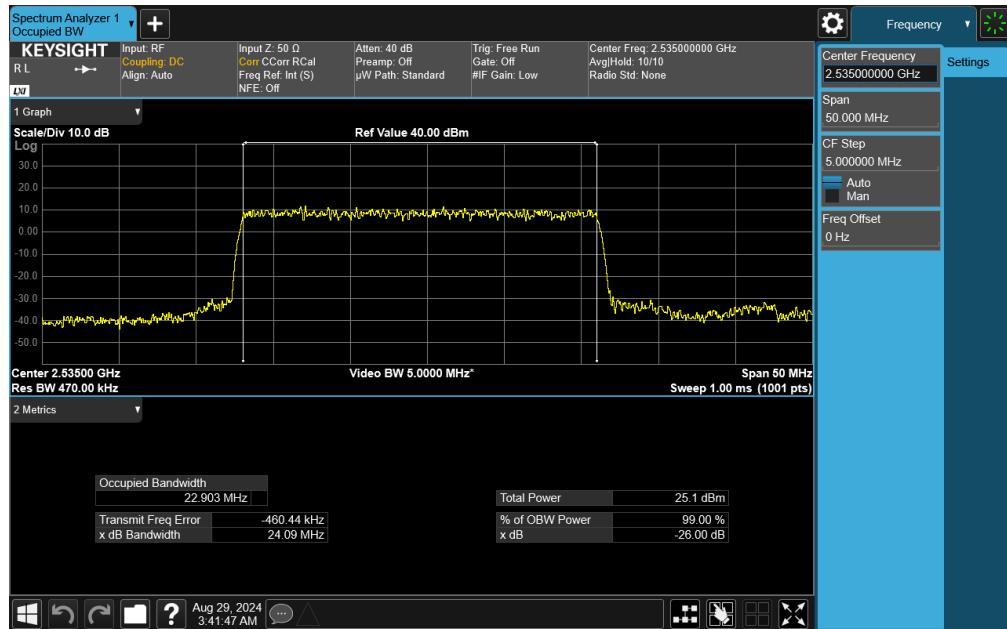


Plot 7-69. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM 64-QAM - Full RB)

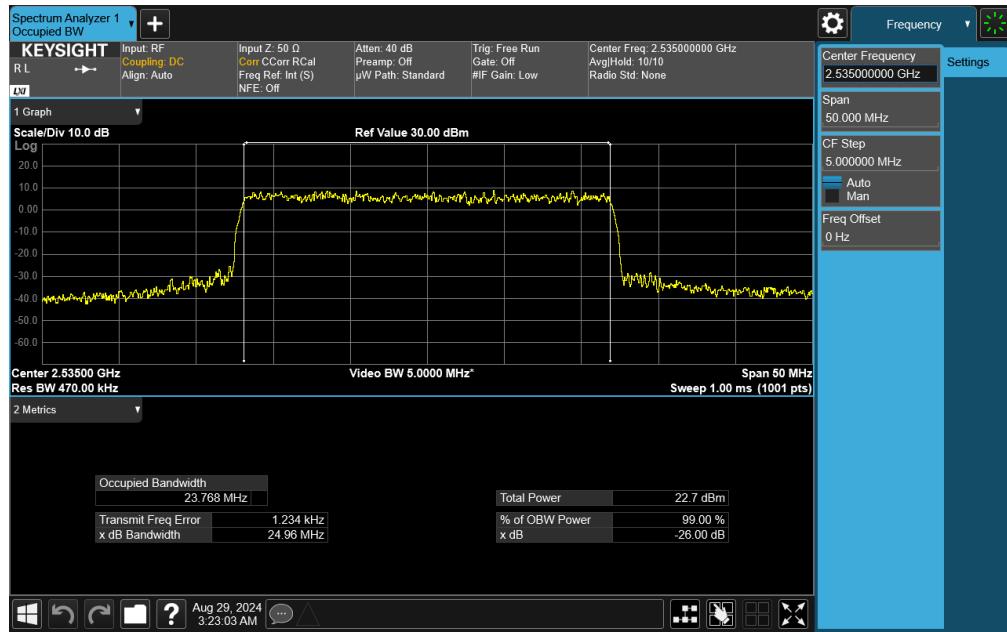


Plot 7-70. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 52 of 427



FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
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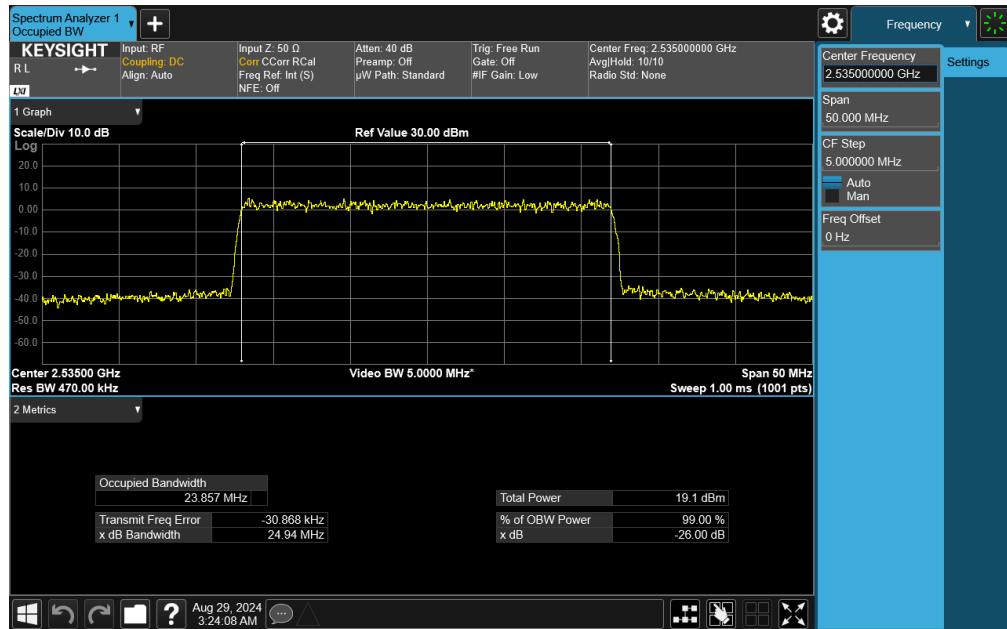


Plot 7-73. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM 16-QAM - Full RB)

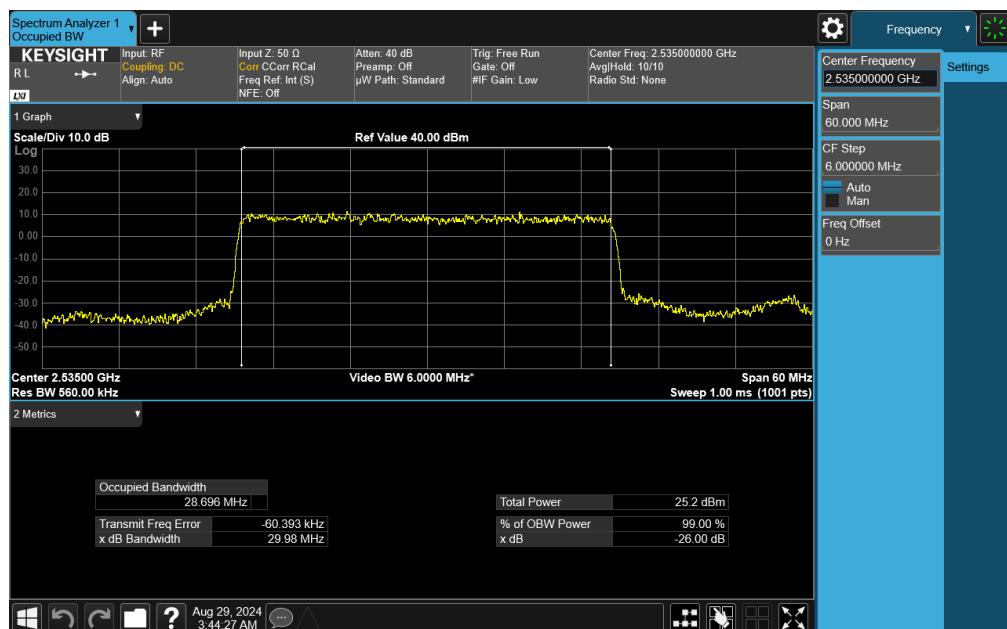


Plot 7-74. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 54 of 427

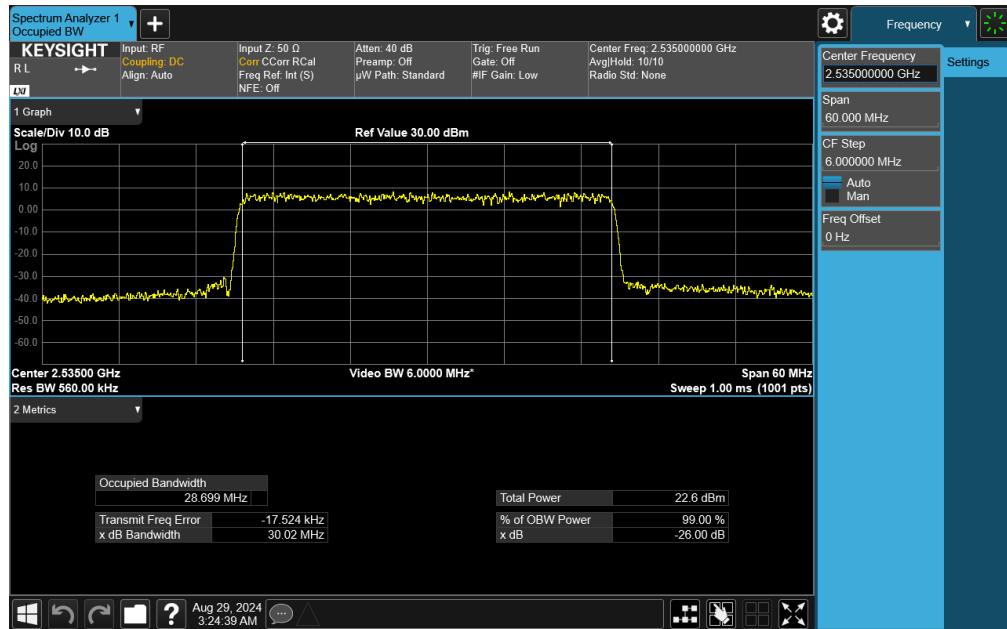


Plot 7-75. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM 256-QAM - Full RB)

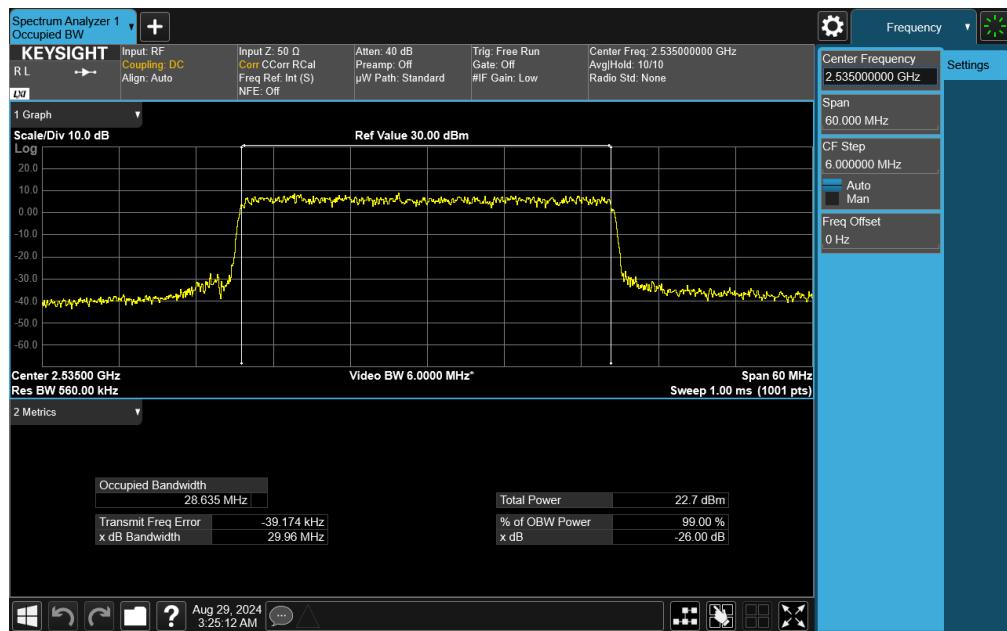


Plot 7-76. Occupied Bandwidth Plot (NR Band n7 - 30MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 55 of 427

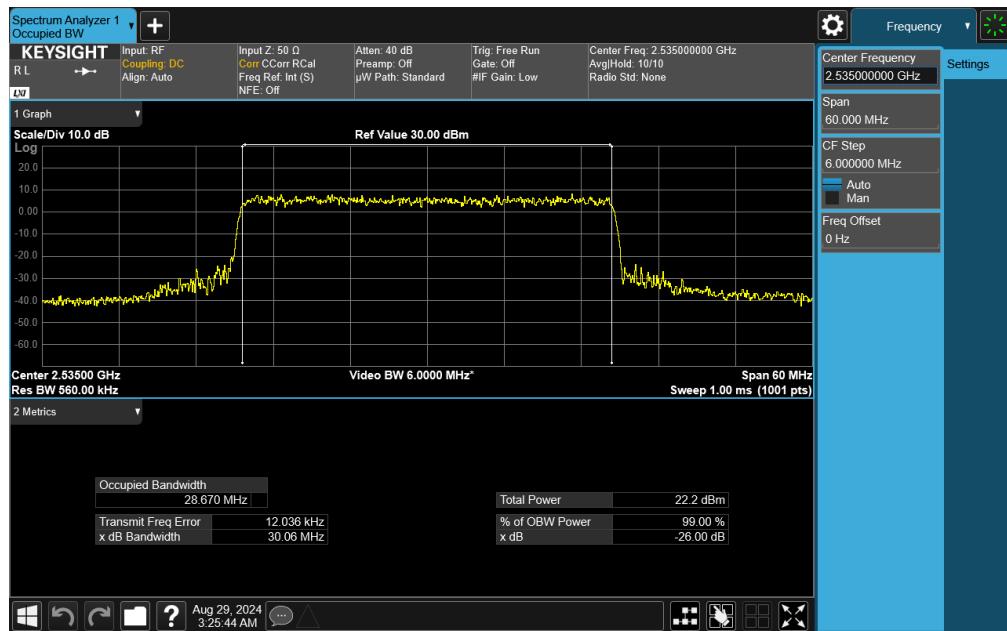


Plot 7-77. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM QPSK - Full RB)



Plot 7-78. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 56 of 427



Plot 7-79. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM 64-QAM - Full RB)

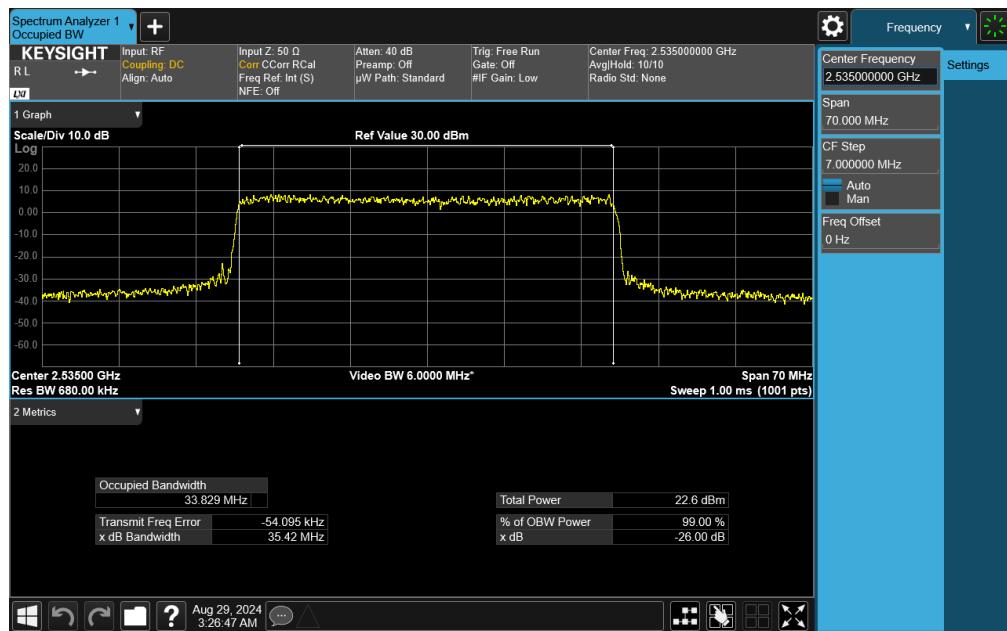


Plot 7-80. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 57 of 427

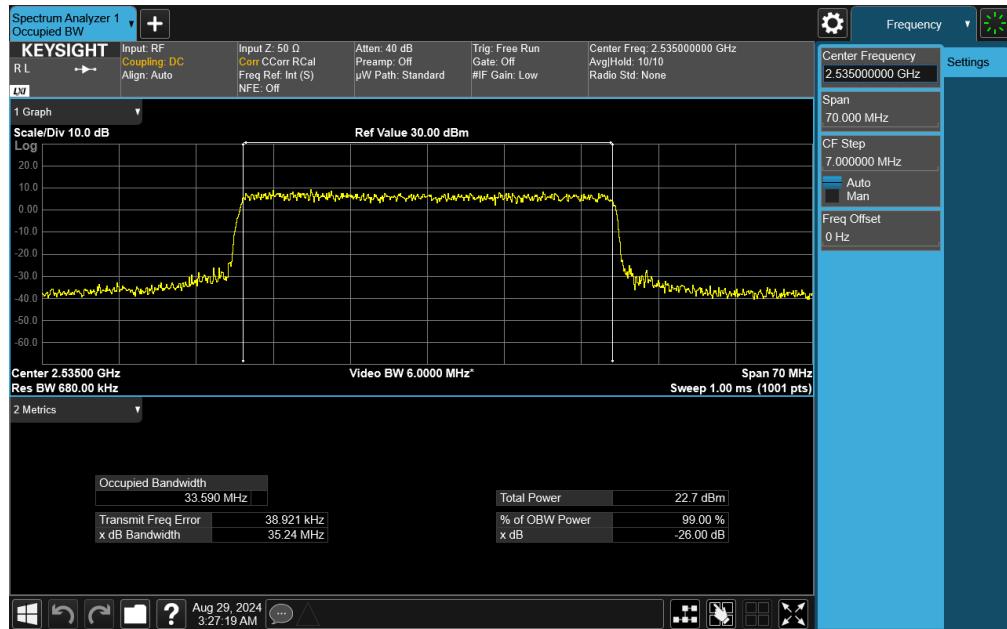


Plot 7-81. Occupied Bandwidth Plot (NR Band n7 - 35MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB)

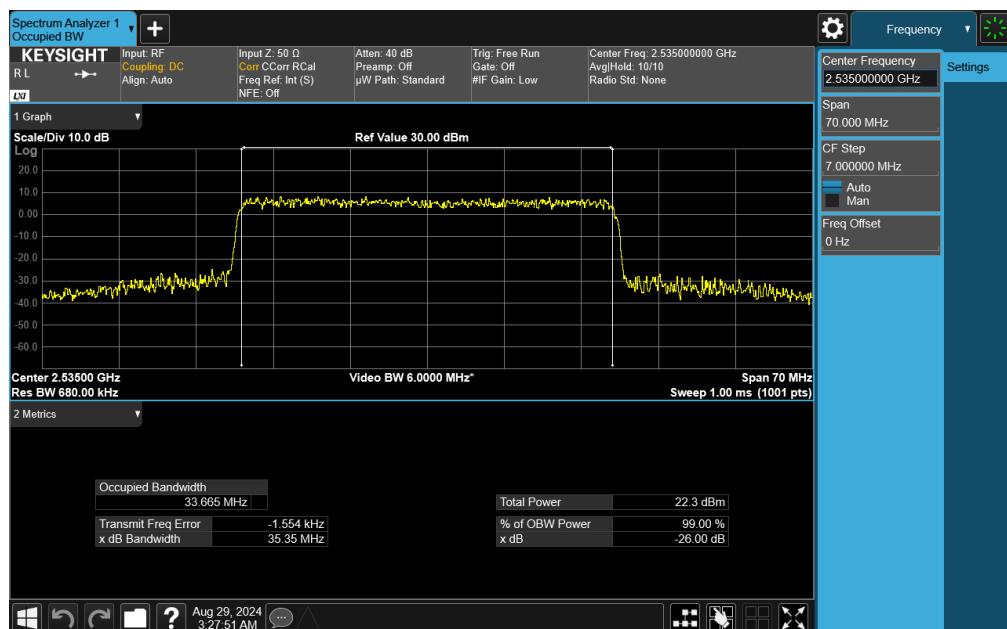


Plot 7-82. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 58 of 427

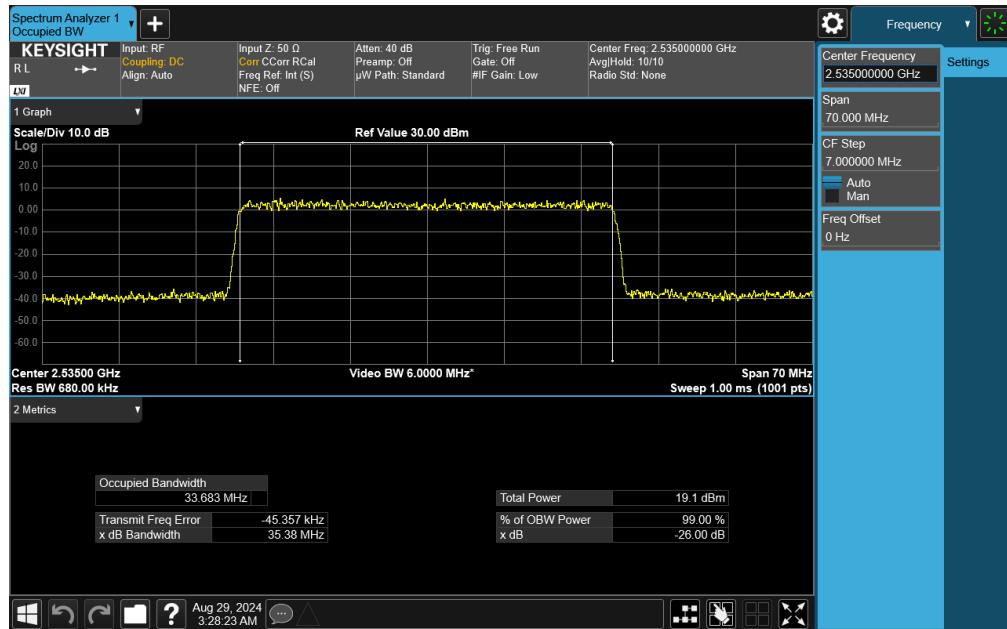


Plot 7-83. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM 16-QAM - Full RB)



Plot 7-84. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 59 of 427

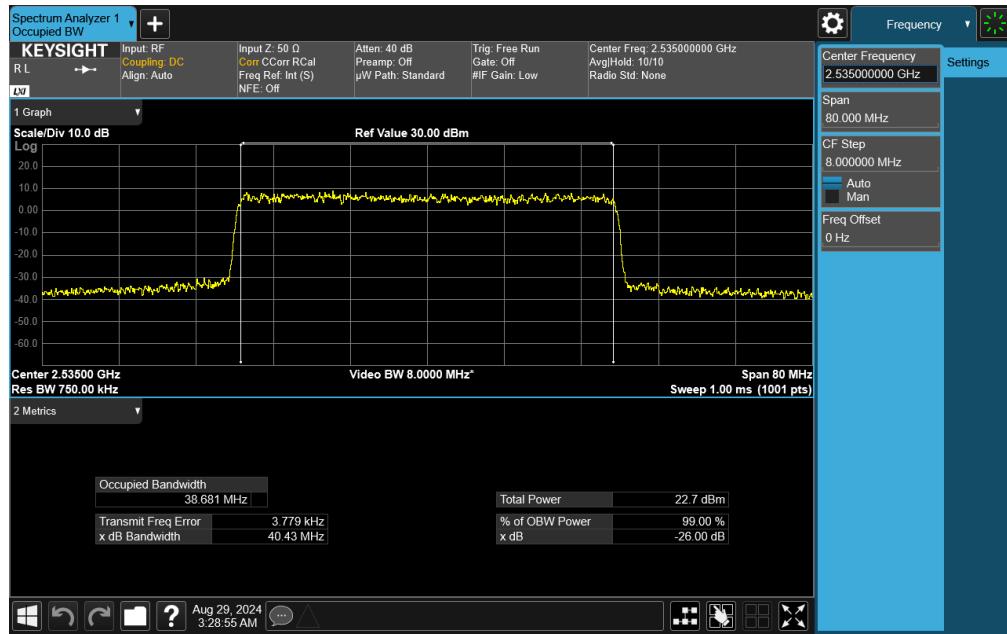


Plot 7-85. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM 256-QAM - Full RB)

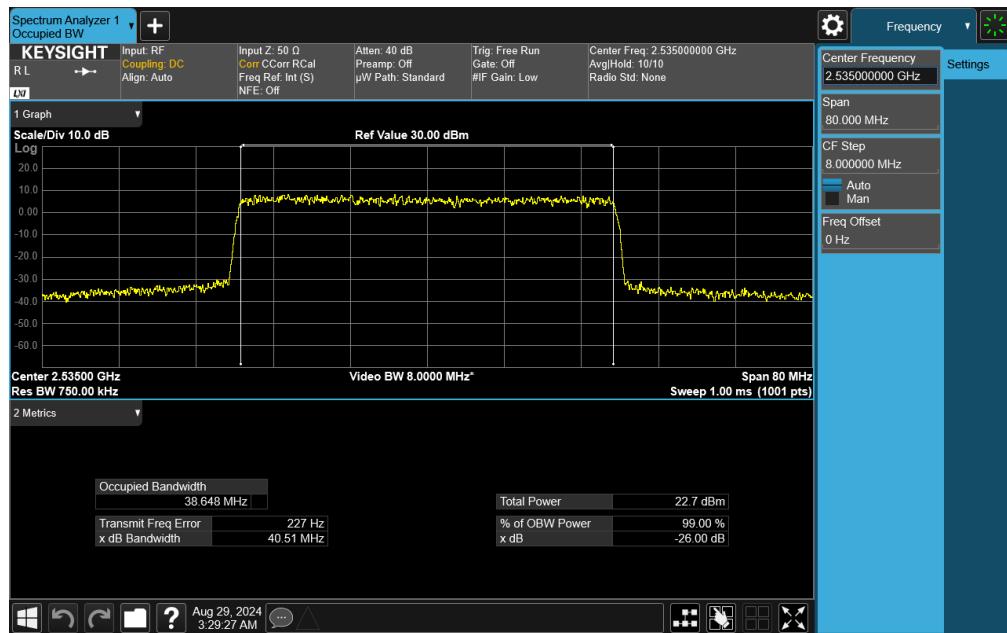


Plot 7-86. Occupied Bandwidth Plot (NR Band n7 - 40MHz DFT-s-OFDM π/2 BPSK - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 60 of 427

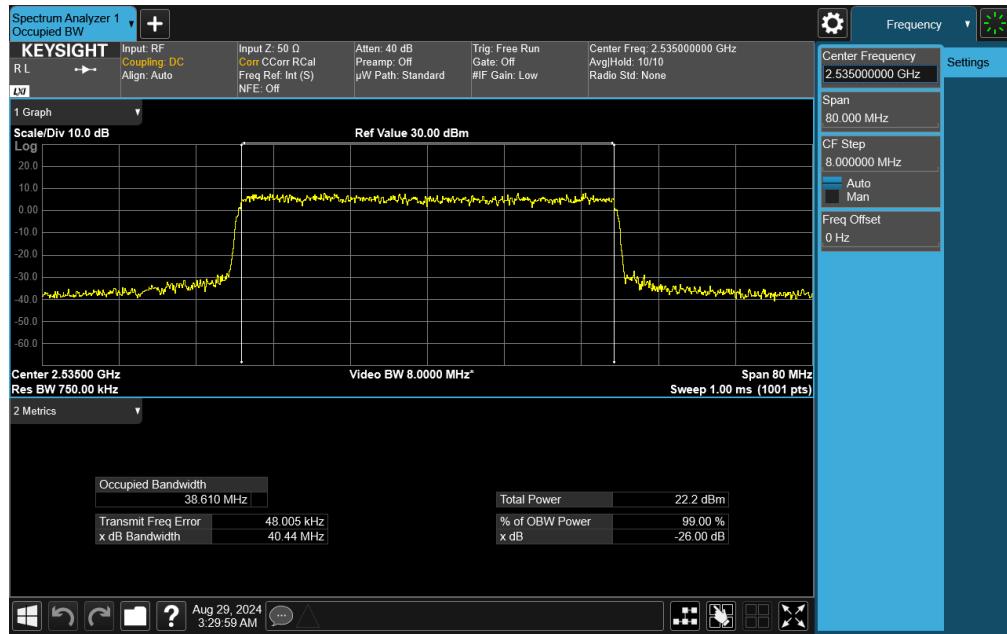


Plot 7-87. Occupied Bandwidth Plot (NR Band n7 - 40MHz CP-OFDM QPSK - Full RB)

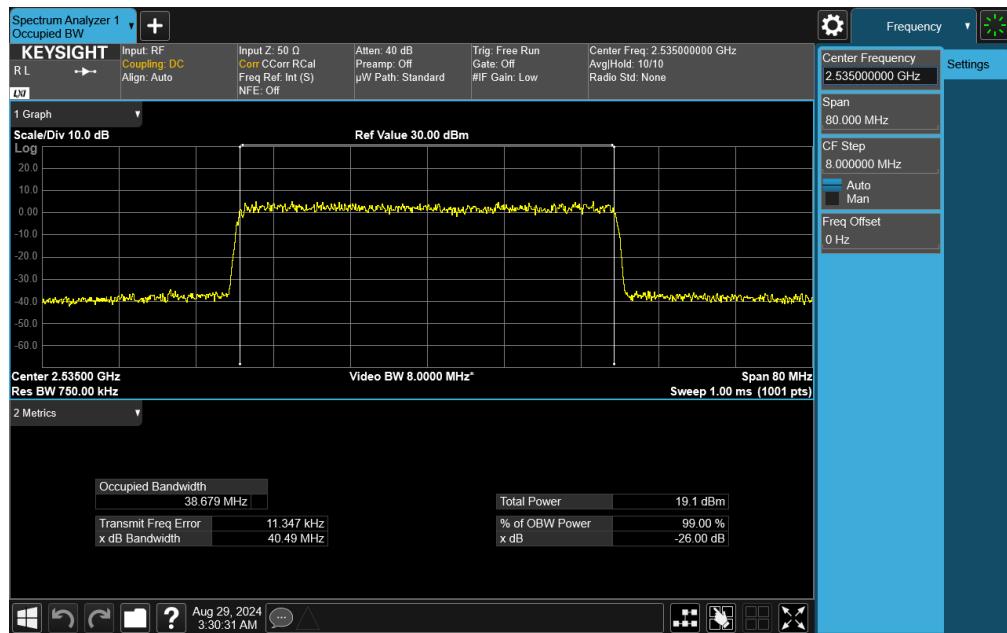


Plot 7-88. Occupied Bandwidth Plot (NR Band n7 - 40MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 61 of 427



Plot 7-89. Occupied Bandwidth Plot (NR Band n7 - 40MHz CP-OFDM 64-QAM - Full RB)



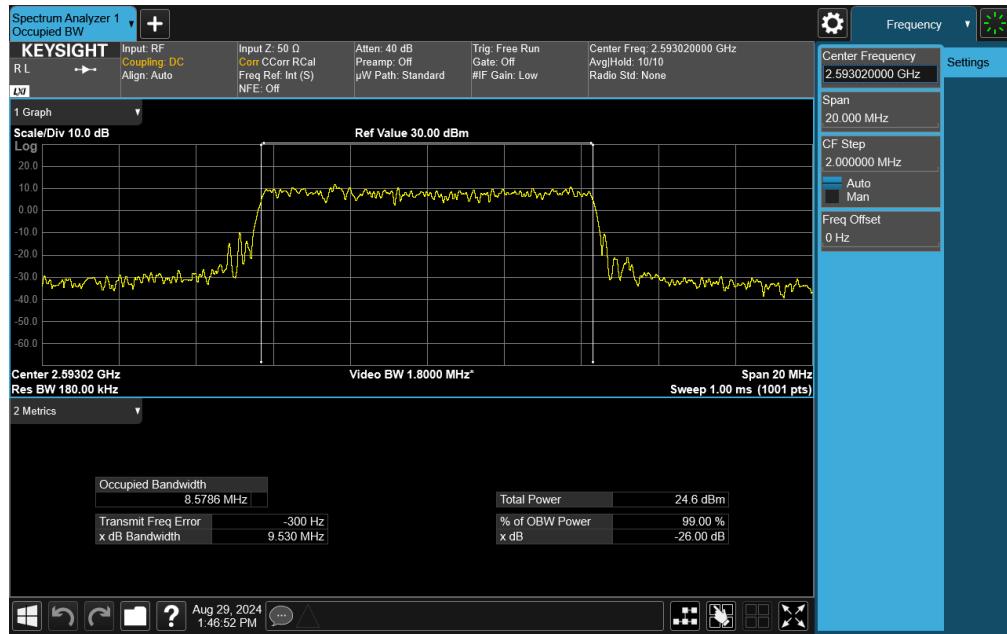
Plot 7-90. Occupied Bandwidth Plot (NR Band n7 - 40MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 62 of 427

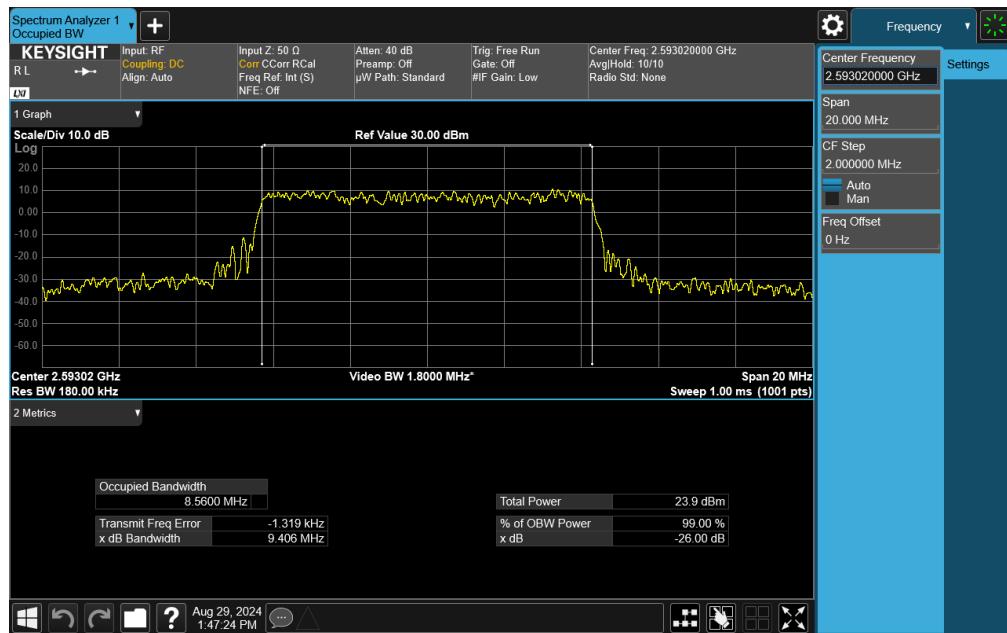
## NR Band n41



FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device	Page 63 of 427	



Plot 7-93. Occupied Bandwidth Plot (NR Band n41 - 10MHz CP-OFDM 16-QAM - Full RB)



Plot 7-94. Occupied Bandwidth Plot (NR Band n41 - 10MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-10-R1.BCG	Test Dates: 7/1/2024 - 12/26/2024	EUT Type: Tablet Device		Page 64 of 427